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CONTENTS AND SUBJECT INDEX

The Perpetuation of Error in Dermatology. Udo J. Wile, M.D., Ann Arbor, Mich.....219

Muscle Tone. Lewis J. Pollock, M.D., Chicago 221

Bismuth as a Diuretic. H. G. Mehrtens, M.D., and P. J. Hanzlik, M.D., with the Collaboration of D. C. Marshall, A.B., and N. S. Brown, A.B., San Francisco...223

Sizes of Resected Gastric Ulcers and Gastric Carcinomas. Walter C. Alvarez, M.D., and William Carpenter MacCarty, M.D., Rochester, Minn. 226

Present Status of the Etiology of Epidemic Encephalitis. Josephine B. Neal, M.D., New York.....231

Milk Sickness, the Result of Richweed Poisoning. James Fitton Couch, Ph.D., Washington, D. C. 234

Tularemia: Report of a Fulminating Case with Necropsy. H. D. Palmer, M.D., and G. H. Hansmann, M.D., Iowa City.....236

Results of Accumulations of Bile Around the Liver: Clinical and Experimental Observations. Waltman Walters, M.D., and Jesse L. Bollman, M.D., Rochester, Minn. 239

An Evaluation of Liver Extract in the Treatment of the Anemias of Sprue: Preliminary Note. Bailey K. Ashford, M.D., San Juan, Porto Rico 242

Fluctuation in the Hydrogen Ion Concentration of Saliva in Epilepsy. A. M. Saunders, M.D., Chicago 244

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Ascaris Passed by Mouth in Case of Laryngeal Diphtheria. Jennie Kantor, M.D., Chicago.....245

A Simple Technic for Checking the Gram Stain. Edwin W. Hirsch, M.D., Chicago 246

SPECIAL ARTICLE

Vincent's Disease 246

COUNCIL ON PHARMACY AND CHEMISTRY 247

MEDICAL EDUCATION, REGISTRATION AND HOSPITAL SERVICE

The Interrelations of Physiology and Internal Medicine. Carl J. Wiggers, M.D., Cleveland.....270

EDITORIALS

A Test of the Vegetarian Diet..248

Sexual Activity 249

Constitutional Aspect of Disease 249

Have You Had Your Iron Today? 250

CURRENT COMMENT

Vitamins in Shell-Fish.....251

A Test for Lead Absorption....251

(Subject Index on next page)

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SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

Abdomen pain, nature....ab-285
surgery, menstrual cycle after....ab-293
Abscess, perinephritic, roentgen diagnosis..C-266
Adhesions, postoperative, prevention....ab-293
Alcoholism, cause of death during....269
Anaphylactic reaction, site....ab-292
Anemia, pernicious, erythrocytes in,....ab-279
pernicious: funicular myelosis....ab-290
pernicious, pellagra relation to....ab-290
splenic, Banti's, in infant....ab-287
splenic, due to streptothrix....ab-285
Anesthesia, general, hyperglycemia in....ab-285
paravertebral, stomach in,....ab-290
regional intravenous....ab-286
Angioma racemosum venosum....ab-278
Aniline dyes in colored pencils, dangers..C-266
Appendicitis, acute, in children....ab-286
differentiating paratyphoid B from....ab-291
Appendix, carcinoids....ab-278
Argentina Pathologic Society....260
Arthritis deformans....ab-289
ammonium ortho-iodoxybenzoate in....ab-282
infectious, infection foci in....ab-284
Ascaris passed orally in diphtheria....*245
Atropine, dosage for gastric spasm....267
Auricular Flutter and fibrillation....ab-286
paroxysmal tachycardia and....ab-286
Bile accumulations around liver....*239
choleretic action of neocinchophen....ab-281
Bismuth as diuretic....*223
Blackwater Fever, therapy....ab-290
Bladder, dermoid of....262
Blood, iso-agglutination....ab-294
epinephrinemia and hypertension....ab-289
fibrinogen and fibrin after liver injury..ab-291
hyperglycemia in general anesthesia....ab-285
posture effect on....ab-280
pressure vs. bismuth....*224
sedimentation rate....ab-280, ab-291
streptococcus antitoxin vs. Dick test....ab-292
Book Notices....274
Books Received....276
Brain, angioma racemosum venosum....ab-278
hemorrhage, incidence....ab-282
vessels, vasomotor control....ab-278
Bran, impacted in alimentary tract....ab-284
Breast inflammation, antivirus for....ab-288
Bronchus necrosis in scarlet fever....ab-290
Bureau of Investigation....265
Butter fat diet, high, vs. growth....ab-280
Calcium chloride in delayed healing....ab-279
Cancer, biologic healing....ab-293
formation and regeneration....ab-288
Freund-Kaminer reaction for....ab-292
noncontagiousness....259
not transmitted by clothing....268
Carotin, presence in tissues....ab-278
Cerebrospinal Fluid, forced drainage....ab-278
Chickenpox and herpes zoster....ab-288
Clams, vitamins in....E-251
Clinical Medicine and physiology....*270
Colon, redundant....ab-283
Constitutional aspect of disease....E-249
Correspondence....266
Coryza, spasmodic....ab-288
Council on Pharmacy and Chemistry....247
Deafness in tularemia....*236
Deaths....264
Dermatology, perpetuation of error in....*219
Diphtheria among family contacts....ab-281
immunization, compulsory, hygienists on..258
laryngeal, ascaris passed orally in....*245
toxin-antitoxin fatalities....262
Disease, constitutional aspect of....E-249
Diuretic, bismuth....*223
Echinococcus cyst, opening into bile ducts..ab-287
Edema, angioneurotic....268
Encephalitis, Epidemic, etiology....*231
Ringer's solution injected into buttocks..ab-282
Endometrium, surgical transplantation...ab-283
Epilepsy, saliva pH in....*224
Esophagus, spontaneous rupture....ab-282
Eye tuberculosis, roentgenotherapy....ab-293
Face, nodular disease of skin....ab-294
Fatty Degeneration, generalized in tularemia..*236
Feet, swelling of....268
Fluorosis....260
Foreign Letters....257
Fracture reduction, new pin for....ab-279
Gallbladder disease, erythrocytes sedimentation in....ab-291
Genital tuberculosis, roentgenotherapy....ab-293
Government Services....256
Hands, swelling of....268
Harrison Narcotic Act, osteopath, registration of....Ml-276
Hay-Fever, roentgenotherapy....ab-293
Health officers, congress of....258
Heart action vs. surgery....ab-291
disease, carbohydrate diet in....ab-283
disease, mental disorder in....ab-285
electrocardiogram, nature of T wave in..ab-284
function and pregnancy....ab-292
spontaneous rupture....ab-278
Hemianopsia in pituitary tumor....ab288
Herpes zoster and chickenpox....ab-288
like viruses isolated from encephalitis...*233
Hospitals, additional approved....269
Buenos Aires....260
Hygiene, instruction in....261
Idiocy, explanation of mongolism....ab-285
Indelible pencils, danger from....C-266
Industrial Medicine, chair of....260
Infants, feeding, artificial....ab-286
feeding, new nipple for....ab-287
Internal Medicine and physiology....*270
Intestines, "flu"....269
tuberculosis, pathology....ab-286
Iron, pathology of....ab-280
content of viscera in avitaminosis....ab-286
have you had your iron today?....E-250
Kefir, value....ab-292
Kidney, nephropexy modified....ab-289
function, water test....ab-294
Laboratories, additional approved....269
Larynx necrosis complicating scarlet fever.ab-290
Lead absorption, test for....E-251
Leishmaniasis and infantile kala-azar....ab-289
Leprosy, anesthetic, recovery from....ab-285
Leukemia, chronic, treatment....ab-293
myelogenous, feeding bone marrow in..ab-282
Lichen planus....268
Life, increase in span of....268
Liver, bile accumulations around....*239
disease, sedimentation speed in....ab-291
diseases, residual water in....ab-292
Extract 343, evaluation....*242
melanosarcoma....ab-279
parenchyma injury....ab-291
Lupus, galvanocautery in....ab-286
vulgaris, treatment....ab-286
Lymphatic absorption around liver....*240
Lymphocytosis of whooping cough....ab-286
Lymphosarcoma....ab-283
Malaria, heredity....ab-289
congenital, clinical picture....ab-290
Malpractice, evidence, expert witness....Ml-277
Marriages....264
Measles, control in institution....ab-281
prevention, convalescent serum....ab-289
Medical Education, Registration....269
Medical syndicates, convention of....261
Medicolegal....276
Meetings, Coming Meetings....277
Memmo, Giovanni, death....260
Menstruation after operation....ab-293
Mental disorder in cardiac disease....ab-285
Mercurochrome solutions, stability....ab-281
Metabolism, influencing by heat....ab-294
disease, radium treatment....ab-293
Migraine, effects of calomel on....267
Milk sickness from richweed poisoning....*234
Muscle, sartorius, myoplasty with....ab-289
tone....*221
Myeloma, multiple, in child....ab-289
Neocinchophen, choleretic action....ab-281
Nephritis, diazo reaction in....ab-281
Nerve hyperplasia of appendix....ab-278
internal pudendal, section....ab-288
presacral, resection....ab-287
Neuritis, retrobulbar, of nasal origin....ab-292
News....252
Nipple, new, for nursing bottle....ab-287
Oysters, vitamins in....E-251
Pancreatitis, acute, diagnosis....ab-291
Paralysis, General, malaria treatment....ab-292
Paratyphoid B, differentiating appendicitis from....ab-291
Pellagra, preventive foodstuffs....ab-284
relation to pernicious anemia....ab-290
Pelvis pain, presacral nerve resected for..ab-287
Peptic Ulcer, differences attributable to sex.ab-294
gastric, resected, sizes....*226
probability that it is carcinomatous....*230
Phenolsulphonphthalein excretion....*225
Physiology and internal medicine....*270
Pituitary Body tumor, hemianopsia with..ab-288
Pituitary Extract in pyelitis....ab-283
loosely bound sulphur in....ab-284
Plague, pneumonic....260
Poison Ivy eruptions, treatment....267
Poliomyelitis, epidemic, Hungary....ab-291
due to milk from cows eating jimson weed....ab-282
in the hospital....267
roentgenotherapy and diathermy....ab-288
Population question, England....257
Potassium in delayed healing....ab-279
Pregnancy and heart function....ab-292
angioma racemosum venosum in....ab-278
morning sickness, treatment....ab-283
Privileged Communication, patient's right....263
disclosures prior to employment....Ml-276
Prostate adenoma, roentgen treatment....268
Prostatitis, chronic, treatment....267
Pubis, tuberculosis....ab-289
Pulse rate, effects of bismuth....*224
Pyelitis, pituitary extract in....ab-283
Pylorus symptom complex....ab-294
Queries and Minor Notes....267
Radium for metabolic disease....ab-293
Reflexes, muscle tone....*221
Richweed poisoning, milk sickness from....*234
Rigidity, decerebrate, muscle tone....*221
Salicylate, mercuric, poisoning from....261
Saliva, pH in epilepsy....*224
Sanocrysin intravenously, deposition of...ab-294
Scarlet Fever, unusual complication....ab-290
antitoxin in blood vs. Dick test....ab-292
Scholarship, exchange....259
Sex activity....E-249
Congresses of Sexology....261
Smallpox, vaccination....258, 259
Society Proceedings....277
Sodium chloride, in delayed healing....ab-279
citrate in delayed healing....ab-279
Sprue, tropical, Liver Extract 343 in....*242
Stain, Gram, simple technic for checking...*246
State Board Examinations....269
Stomach volvulus and aerocoly....ab-286
cancer, resected, size....*226
cells activity, repeated test meal....ab-290
function test with neutral red....ab-290
in paravertebral anesthesia....ab-290
plastic linitis....ab-289
secretion, electrolyte variations in....ab-280
spasm, atropine for....267
Stone cutters, pseudotuberculosis in....259
Streptothrix, splenic anemia due to....ab-285
Suicide, investigation, Tokyo....259
Surgery, preventing adhesions....ab-293
trauma vs. blood....ab-291
Sympathectomy, arteries after....ab-288
Syphilis, acquired, in family groups....ab-282
infection from cadavers....262
lesions, localization in inflamed areas..ab-280
Tachycardia, paroxysmal....ab-286
Tetanus from catgut....257
Tetany, gastric, pathogenesis....ab-292
Thermometry, 300 years of....ab-292
Thyroid cells, iodine increases mitotic activity....ab-278
Tissues, carotin in....ab-278
healing, effect of calcium chloride, etc..ab-279
Tongue, angiosarcoma....ab-279
blacktongue preventive foodstuffs....ab-284
cancer, treatment....ab-287
cavernous hemangioma....ab-282
Tonics and Sedatives....Adv. page 22
Tonsillectomy, hemorrhage after....ab-294
Trachea necrosis complicating scarlet fever.ab-290
Trembles from richweed poisoning....*234
Tremetol, causes milk sickness....*234
Trypanosomiasis, combating....263
Tuberculosis, Vernes' test in....ab-287
course in....261
immunity....ab-294
insurance against, compulsory....261
methylated antigen treatment....ab-288
organs of hearing and....261
sedimentation reaction in....ab-280
vegetative system rôle in....ab-288
Tularemia, pathologic anatomy....ab-278
fulminating case with necropsy....*236
Tumor, roentgen rays plus dextrose for..ab-293
Typhus, Mexican, etiology....ab-290
Urticaria caused by light....267
Uterus, acute inversion....ab-282
cancer, carbohydrate metabolism vs. roentgen rays....ab-293
scar cervix, treatment....268
vesicovaginal interposition....ab-292
Vegetables, iron content....E-250
Vegetarian diet, test....E-248
Venereal Diseases, marked decrease, Germany.263
Vincent's Disease....246
Virus, filtrable, causes epidemic encephalitis.*233
Vital Statistics, Italy....260
Vitamins, iron content in avitaminosis....ab-286
in shellfish....E-251
Whooping Cough, lymphocytosis....ab-286

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THE PERPETUATION OF ERROR IN DERMATOLOGY*

UDO J. WILE, M.D.

Professor of Dermatology and Syphilology, University of Michigan Medical School

ANN ARBOR, MICH.

Dermatology, starting as a separate field of medical science, may be said to be scarcely more than half a century old. Initially, its teaching was based on a series of morphologic pictures, which differed in minutiae. Its development along these morphologic lines has resulted in a ponderous nomenclature to which are constantly being added new diseases and new names.

Acknowledging freely our deep obligation to our predecessors and teachers, to whom for the establishment of dermatology as a separate field of medicine we owe an everlasting debt, it is only fair to say that as a specialty based purely on morphology, dermatology could not have developed and taken its right place in the field of modern medicine.

Its setting up as a separate specialty not only achieved this commendable result but also made for a lamentable cleavage from other fields of general medicine, with which it is indissolubly bound. Not only has this unfortunate separation led to a more limited knowledge on the part of the dermatologist of the associated medical sciences, but the practitioner at large has been unable to bring the multiform cutaneous pictures into association with the commonplace facts of his everyday medical knowledge.

The last two decades have seen a gradual but definite reassociation of the special field of dermatology with the other fields of general medicine, and the artificially created gap is gradually being closed, particularly as a result of the effort to correlate the various cutaneous pictures with the general pathologic states to which the human body is subject.

The broader concept of dermatology as cutaneous medicine, suggested by the late Louis Duhring, is rapidly finding its justification in the realinement of most cutaneous pictures as a reflection, in a great metabolizing organ, of pathologic processes within the body. This view of the skin as "the mirror of the body" was ably set forth in a paper delivered several years ago before the Chicago Medical Society by Martin Engman of St. Louis. To those younger dermatologists who are not familiar with it, a perusal of this article will give much food for thought.

The proper acceptance by us of dermatology as a separate field, closely associated with our fundamental medical sciences and with other clinical branches, will serve to make us more useful as practitioners and less empiric in our treatment, will add dignity to our field, and will gain for us a higher regard from our colleagues.

The advances in medical science, both in scientific and in clinical fields, are slow and painful processes. Before the successful completion of each scientific experiment, there are many disappointments and failures. The great advances in clinical medicine, in treatment and in diagnosis are not as a rule the result of accident but of painstaking observation and of meticulous attention to details and careful deductive reasoning.

The startling advances in the fields of metabolism, of chemotherapy, of biochemistry and of physical chemistry not only apply to the field of general medicine but reach far out into the so-called special branches, including our own.

Difficult as it was in the beginning for a man to become a competent dermatologist, these difficulties are now manifestly many times increased by reason of the broader concept mentioned before and by virtue of the fact that, to appreciate properly and to be able to continue the advances, the dermatologic neophyte must be a man well schooled in the fundamental sciences, and with a good medical background.

In twenty years of practice in dermatology, of which sixteen have been spent in active teaching, I have been impressed with two factors that militate against progress and independent thought among young practitioners. In touching on these, I freely acknowledge that I have on occasion been led into like error, and therefore feel qualified to point out the danger to others.

The first of these factors is a trustful adherence to tradition and a placid acceptance of facts that come to us from those we recognize as authority. The second obstacle to progress is a less pardonable fault, and consists in a certain laxness in scanning the literature, resulting in faulty translation and occasionally in gross misquotation. These factors frequently lead to the needless perpetuation of an erroneous concept regarding the nature of a disease, and stand in the way of the elucidation of its true nature.

Any one who has had to refer back to the literature, particularly that in foreign languages, is struck at times by the frequency with which quotations are taken wholesale from one article and incorporated into another, when it is perfectly obvious that the articles have not been read in the original. In this way not only are references frequently misdated, but their text, occasionally misquoted by the first reviewer, is handed down in misquoted form, serving only to complicate and obscure the background of the problem investigated, rather than to clarify it.

*Studies and contributions of the Department of Dermatology and Syphilology of the University of Michigan Medical School, service of Dr. Udo J. Wile.

* Chairman's address, read before the Section on Dermatology and Syphilology at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

In a field changing with such kaleidoscopic rapidity as that of the practice of medicine, uncritical adherence to tradition and precedent is a dangerous staff to lean on. I refer here not to the tradition of the ethics of our profession as they affect practice, even though these have had to change with the trend of modern time and the ever changing character of human relationships, but particularly to that adherence to tradition which leads to the establishment of inflexible dogmatism in treatment, and to rigid criteria of diagnosis.

How frequently does the young dermatologist, restrained in his judgment by tradition, fail to recognize a disease in a child which his textbook says is limited to adults. How frequently is a cutaneous disease, otherwise easily recognizable, made difficult to diagnose by the appearance of like lesions in the mucous membranes, or in places where it is said they do not occur. The literature is full of cases recorded as rare or unclassified, which are merely variants of the general rule, and which the inflexibility of our diagnostic criteria fails to permit us to classify.

It is perhaps only natural for the beginner in dermatology to look to the names of those who have contributed to his special field as sources of unlimited wisdom, and as incapable of incorrect thinking. It is a sad commentary that scientific men may be better remembered by their mistakes than by their contributions to truth. In fact, trivial and inconsequential errors become increasingly important the more outstanding the position of the person who makes them. A mistake or a scientific untruth, in no sense dishonest, becomes increasingly dangerous in proportion to the scientific reputation of its perpetrator.

The statement of an authority that a disease is caused by this or that, or the establishment as a pathologic entity of a perfectly normal process variable only in point of location, frequently leads to the perpetuation of a serious error in diagnosis, classification or treatment.

The resulting confusion can be cleared up only by free acknowledgment of error and wide publication of that acknowledgment by the mistaken authority, or by the cultivation of a healthy skepticism on the part of the novitiate, who accepts only those things as true which stand rigid scrutiny and are unassociated with the worshipful attention which the beginner is so apt to accord to those who hand his knowledge down to him.

During the past year I have come across three interesting examples of the perpetuation of error which are due solely, I believe, to the prestige and authority and, indeed, the scientific achievements and contributions toward truth of those who made these errors.

The first of these has to do with the confusion of angiokeratoma and ordinary angiomas. The former is an extremely rare disease, definitely characterized by lesions of a certain type with little variation in the picture. There are probably very few examples of this disease in the literature. The faulty identification of this disease with simple angiomas of the scrotum has led to a large number of cases of the latter being faultily included under the head of angiokeratoma, not only in the literature but before special societies, and even in pictures in textbooks on dermatology.

A careful study of the microscopic appearance of angiokeratoma shows it to be a disease apparently following injury to the upper layers of the skin, and leading to minute hemorrhages which gradually enlarge. Associated with the hemorrhage is a rather unusual reaction of the epidermis, which becomes heaped up and takes on a distinct warty appearance. Sooner or later the bloody contents of the lesion are discharged, and a slight degree of atrophy results.

Simple angiomas, such as occur on the scrotum, are not infrequent, and closely resemble in the gross morphology and their histology the so-called senile angiomas of the body surface which, however, are frequently found in younger persons and are in no way a mark of senescence.

The resemblance of such lesions to those of angiokeratoma is very slight, and it is difficult to see how they could be confused. In the scrotal angiomas and those occurring on the body under the name of senile angioma, we are dealing with newly formed blood vessels and blood spaces in which the blood is always contained in endothelial lined vessels or cavities, and in which hemorrhage is never an accompanying condition.

The reporting of a single case of angioma of the scrotum by competent authority as angiokeratoma has led to an entire misconception of the latter condition, and to the faulty inclusion of what is almost a normal process with a rare and unique disease.

A second interesting example of the perpetuation of error is the acceptance of an existing hypercholesterolemia as the cause of xanthomatous lesions. The literature on this subject includes not only cases of true xanthoma, in which it has been recently shown that cholesterol plays only an accessory rôle in the causation of the condition, but also innumerable cases of xanthoma palpebrarum or xanthelasma. The latter are purely local phenomena in no way associated with the disease in question. The perpetuation of this error has been due, not only to carelessness in literary quotation and to the uncritical acceptance of erroneous data handed down from decade to decade in many cases by those who never worked on the problem, but also to a pardonable factor of faulty chemical methods by those who did.

A third misconception, which, I believe, will be shown during this meeting to be an error perpetuated largely, although not wholly, through blind devotion to precedent and tradition, is in the acceptance of that much mooted entity, the so-called pityriasis rubra. One of our younger fellows will, I think, place ample evidence before this section that there is justification for the abandonment of this term as an entity.

The mental equipment necessary or desirable for the making of a competent dermatologist differs little from that required for the development of skill in any other practical field. Perhaps one attribute which characterizes the competent student of cutaneous medicine, and might be placed as foremost in his mental equipment, is a discerning and observant eye.

The ability to pick out and distinguish minutiae that may have fundamental importance in differential diagnosis can, it is true, be cultivated by long years of practice.

There are, however, certain individuals to whom such a training comes with greater ease than it does to others. They are perhaps naturally more observant.

A proper background, therefore, desirable in the equipment of the dematologist of today would seem to be a good workable knowledge of physics and chemistry, as they apply to therapeutic measures, a substantial background of internal medicine, and an eye which, if not naturally discerning, can readily be educated to the fine differences on which differential diagnoses in cutaneous medicine depend. Together with this, of

course, must be the ability of the dermatologist to correlate his knowledge and his clinical observations.

To this I should like to add that the novitiate in dermatology could very profitably have what might be called a degree of healthy skepticism for the explanation of conditions that are not already scientifically proved. Cutaneous medicine is as yet only a partly explored field. The inroads into its mysteries are still narrow paths. We must look to the young dermatologist of today for the elucidation of many of our obscure problems, and for the bringing into the light of scientific truth those still shrouded in mystery.

Armed with a desire to learn and a disinclination to accept any but proved facts, the beginner in dermatology will find himself best equipped to enter our special field freed from the shackles of precedent and least hampered by traditional error.

MUSCLE TONE*

LEWIS J. POLLOCK, M.D.
CHICAGO

In addition to the honor conferred on me by being chosen to serve as your chairman, there has, by a peculiar circumstance, been accorded to me a privilege to take advantage of which seems to be ungenerous—namely, to indulge in what Hill so aptly describes as "impertinent speculation."

Despite what seems to be an instinctive understanding of what is meant by muscle tone, a clear definition of this property is not available at the present time. Many confusing meanings are employed and as the result various investigators are deep in controversy over seemingly similar, but actually different, properties. These meanings began in Roman times with Galen's definition of "active posture" and end with the conception that muscle tonus is a proprioceptive reflex. "A muscle extended by the normal anatomical attachments of the body frame possesses tone. Stretch, therefore, appears to be the adequate stimulus for the maintenance of a tonic condition" (Fulton).

Between these we have innumerable conceptions, including that of Johannes Müller (1838), who first employed the word "tonus" as meaning a slight contractile tension, characteristic of normal skeletal muscle when at rest. Tension, contractility, elasticity, extensibility, resilience, plasticity, hardness and many other properties are at times used synonymously with tone. What relation these several properties bear to tone is unknown. None are tone, and all may be a part of it.

A slight contractile tension is present even after death, and rigor may produce a type of contracture. Direct myotatic irritability is increased for a short time after death, and for a considerable time after denervation. One may state that although shorn of reflex tone a denervated muscle possesses a certain quality which when properly stimulated possesses "tone." Would a muscle which shows a marked ideomuscular reflex, probably because of a change in its metabolism, react to reflex and voluntary stimulation by changes in tone in the same way as a normal muscle? Probably not.

Patients suffering from dehydration or from the effects of epinephrine intoxication who exhibit increased ideomuscular reflexes complain of stiffness in their movements. In cases of tetany when direct myotatic irritability is increased, is the long duration of a contraction of a muscle following mechanical stimulation merely the expression of a reflex act? Does the patient suffering from myotonia who has to "limber up" his muscles by repeated contractions possess the same kind of increased tone as is found following a corticospinal lesion? When a muscle cramp occurs as the result of local anemia following exposure to cold, are we necessarily dealing only with a reflex disturbance of tone?

These examples are cited to show that disturbances in such muscle function as has to deal with contractility, shortening, elasticity, extensibility and hardness occur from changes in metabolism and nutrition of muscles themselves. Although admittedly not directly related to what is generally understood as muscle tone, let us say in the sense of a stretch reflex, nevertheless until thoroughly investigated no one can say that some factor at work here may not likewise be at work along with other mechanisms when certain and only certain reflexes are evoked. Nothing is known of these peripheral types of changes in tone as to their physical, physiologic or chemical meanings. The same may be said of that type of tone which is increased in diseases of the globus pallidus producing parkinsonism.

The study of disturbances of tone is relatively simple in the laboratory. It is very difficult when conducted clinically. For example, it is generally understood that by tone is meant a state of tension not dependent on voluntary innervation; yet we know, through such conditions as intentional hypertonia, the baffling and tremendous influence of voluntary innervation on muscle tone. In the laboratory it is only when we deal with a very simple preparation that the subject lends itself easily to study. In so simple a problem as the comparison of the elasticity of resting and active muscles, we are startled by Gasser and Hill's apparently conclusive experiment which shows that, contrary to all accepted thought following Weber, the elasticity of the active muscle is increased. Its extensibility is increased and this heretofore has been taken to mean that the elasticity was diminished.

When we are dealing with a simple spinal reflex arc the conditions are somewhat controllable, but the more of the higher levels that are included, the more variable are the results and the more complicated their interpretations.

Much of what is known of muscle tone has been learned from the study of decerebrate animals. When an animal is decerebrated at levels between the colliculi and the exit of the eighth pair of cranial nerves, a preparation results in which decerebrate rigidity, so beautifully and completely analyzed by Sherrington and later by Magnus and de Kleijn, ensues. When fully developed the rigidity is marked, the spine is extended, the tail is held in a horizontal position, the extremities are fully outstretched, the head is maintained in a lifted position, despite gravity, and there may be some opisthotonos of the head on the neck. Such an animal if carefully posed can be made to stand. In fact, the posture is described as a rigidity in an antigravity position or a caricature of standing.

Sherrington has shown that there are two great reflex systems in the innervation of the skeletal musculature. One system maintains and regulates steady tonus in the musculature, which is the basis of posture. This tonus is reflex in nature and can be varied, producing change in posture, by reactions from the labyrinth, neck

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* From the Department of Nervous and Mental Diseases, Northwestern University Medical School.

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 13, 1928.

and body (righting and standing reflexes of Magnus and de Kleijn). The stimulus in the case of the muscle proprioceptors, as Sherrington and Liddell have shown, is stretch. The other reflex system produces phasic or short-lived movements and its arc is largely spinal.

Although it has been considered that the basis of the decerebrate rigidity is produced by a muscle proprioceptive reflex stimulated by stretching, Loyal Davis and I have found that, when the posterior roots of one foreleg are cut, the extremity is held as rigidly extended as is the opposite one. In some other previous experiments we have shown that when the labyrinths were destroyed the unsupported head dropped, and the forelegs instead of being extended became flexed but the rigidity in flexion was as great as was that in extension of an ordinary decerebrated animal. In still another group of experiments some preparations were made in which a normal distribution of tone was present, and walking and climbing were possible until the head was turned with the occiput down, when extensor decerebrate rigidity ensued. From these three groups of experiments it may be concluded that, although the stretch reflex produces a constant tone in the muscles and this tone may be modified by labyrinthine and other reflexes, the labyrinthine tonic reflexes alone are sufficient to produce and maintain the same degree and type of tone. Under certain conditions the stretch reflexes do not produce decerebrate rigidity in extension until a labyrinthine tonic reflex is induced, when both mechanisms are probably at work. All this may be taken to mean that various tonic reflexes can alone produce decerebrate rigidity, and that the exact posture or, in other words, the distribution of tone into flexors or extensors depends on the activity, combined or alone, of these various mechanisms.

Thus far we have seen that the tone of decerebrate rigidity is the result of contraction in the muscle due to certain reflex activities.

One of the characteristics of decerebrate animals, although not peculiar to them alone, is the exhibition of "lengthening and shortening" reactions. These reactions which have been described in numerous contributions by Sherrington, Brown and others are well known. When one attempts to flex forcibly the hind leg of a suspended decerebrate animal, the extensor muscles resist the movement with considerable force. Continued pressure is followed by sudden relaxation and flexion at the knee. When the leg is released the extremity remains flexed at approximately the angle to which it had been moved. This is the lengthening reaction. If the leg is passively extended, the quadriceps remains at that length to which passive extension of the leg brings it. This is the shortening reaction. These reactions make the extremities seem plastic or moldable. To this plastic quality has been attributed the fixing function of the muscle, and its origin is now somewhat controversial. Sherrington and his school believe that both of these reactions are reflex in character, the lengthening due to reflex inhibition, the shortening to the stretch reflex.

The conception of Hunter and Royle, developed from that of Langelaan, of the existence of a dual innervation, the plastic tone being subserved through the sympathetic system, has received but little support.

Ranson believes that the plastic factor in decerebrate rigidity which is responsible for the uniform stiffness, and which causes the limb to take and keep a posture imposed on it by external force, is lost by section of the dorsal root. He believes that the theory of Trzecieski and that of Frank of the antidromic conduction of special tonic impulses in the dorsal root has much in its favor. He notes the argument of Spiegel that the presence of tonic neck and labyrinthine reflexes in a deafferented limb invalidates the theory of the antidromic conduction of tonic impulses in the dorsal roots, but adds that "this argument will not be of much weight until it has been shown that section of the dorsal roots does not affect the steadiness and indefatigability of the tonic and labyrinthine reflexes." This, I believe, is just what our experiments show, but the validity of Ranson's assumption is not nullified by these observations as related to the spinal cord itself.

The current conceptions, therefore, are that the plasticity of decerebrate rigidity is dependent on the integrity of the posterior roots of the labyrinth. "According to the theory of muscle tonus that one holds, one can explain this plasticity as a steady reflex contraction called forth by afferent impulses from the tonic muscles themselves, or as due to special tonic impulses traveling antidromically over the dorsal roots" (Ranson).

It is my view that whether any spinal tonic impulses travel antidromically over the dorsal roots in an ordinary decerebrate animal or not, section of the posterior roots in a decerebrate animal does not sufficiently modify the rigidity produced by labyrinthine reflexes to enable one to point out differences between such a rigidity and one in an animal with the posterior roots intact. Recently Davis and I reported some experiments wherein it was found that when a muscle intoned by a tonic labyrinthine reflex was stretched by gradually increasing force and then the force gradually diminished, not only did it fail to shorten with decrement of pull but continued to lengthen, being, as it were, "pulled out." If, however, the muscle were first stretched and at the height of stretch a tonic labyrinthine reflex produced, the muscle then shortened with decrement of pull; but if coincident with the production of the tonic labyrinthine reflex at the height of stretch the muscle was further stretched no shortening occurred and the muscle remained "pulled out." This we felt was not due to any diminished elasticity, nor was it due to inhibition, under which condition the lengthening would be graded to the degree of stretch, and although perhaps not shortening with decrement of pull, would not continue to lengthen. We believe that the elongation is the result of a change in the physical property of muscle when intoned by a tonic reflex. It is, to use an analogy suggested by Prof. W. T. Bovie, as if an elastic muscle were turned to a substance like gum which is turned back into a substance like rubber at the first reflex activity. This property of being pulled out was present in deafferented muscles as well as in intact ones. Shortening, however, was found to be dependent on the integrity of the posterior roots.

Such a conclusion, introducing a new property of muscle, perhaps chemicophysical in nature, must be painful to many physiologists, who would explain all of the phenomena of muscle contraction and tone on the "all or none" principle and who decry the necessity of a mechanism other than neural. Our conception, however, does not nullify the theory that tone is produced by a stretch reflex; it does not deny that the shortening reaction may be the result of a stretch reflex. It only points out that tone can be produced by reflexes other than stretch, and that tonic, labyrinthine reflexes produce a change in the physical property of muscle which permits it to be purely mechanically stretched, while other reflex adaptations occur.

The significance of my introduction now appears in the conclusion that, although investigations to date have shown that most of the mechanisms dealing with tone as interpreted by studies of decerebrate rigidity have a neural basis, it does not follow that other mechanisms are not involved. These mechanisms await discovery, and neurophysiology must enter into an alliance with physics and chemistry, to the end that their discovery may be hastened.

25 East Washington Street.

BISMUTH AS A DIURETIC *

H. G. MEHRTENS, M.D.
AND
P. J. HANZLIK, M.D.
WITH THE COLLABORATION OF
D. C. MARSHALL, A.B.
AND
N. S. BROWN, A.B.
SAN FRANCISCO

In a recent preliminary report on the excretion and fate of bismuth injected in human subjects, we [1] stated provisionally that bismuth acted as a diuretic. The considerable increases in urine output occurred in both ambulatory and confined subjects. Since these patients had an uncontrolled fluid intake, it was necessary to test the matter conclusively with patients on a constant fluid intake. This has now been done and our original impression that bismuth acts as a diuretic has been confirmed. Since then we have also tried the oral administration of the bismuth oxysalts, but with nearly equivocal results as to diuresis. This paper reports the important details of the bismuth action after the intramuscular and oral administrations of different compounds.

INTRAMUSCULAR BISMUTH

The following bismuth preparations were injected in single and repeated doses: bismuth metal suspended in dextrose solution, and potassium bismuth tartrate and bismuth salicylate suspended in oil. The patients used were mostly neurosyphilitic, the remainder being convalescents in good general condition. Table 1 presents the essential data from subjects on the uncontrolled water intake, and the curves in chart 1 illustrate the courses of urinary and bismuth excretion following the administration of the three different preparations used in three of the subjects. Chart 2 presents the results with five subjects on the constant fluid intake.

TABLE 1.—*Diuresis After Bismuth Preparations Intramuscularly*

Subject	Total Dosage of Bismuth	Daily Urine, Cc. Before Bismuth	Daily Urine, Cc. After Bismuth*	Per Cent Increase
St.	0.15 Gm. as metal.....	1,900	2,500, 7th day	21.0
Ni.	0.28 Gm. as metal.....	1,150	2,100, 8th day	82.6
Av.	0.60 Gm. as metal (partial).	1,300	2,600, 3d day	100.0
Ha.	1.05 Gm. as metal (first trial).....	2,300	4,400, 4th day	91.0
Va.	1.20 Gm. as metal.....	1,500	2,400, 17th day	60.0
Tr.	7.0 Gm. as metal.....	2,000 (?)	4,400, 340th day	120.0
Ta.	0.056 Gm. as potassium bismuth tartrate.....	850	2,100, 2d day	147.0
Wh.	0.112 Gm. as potassium bismuth tartrate.....	1,270	1,800, 7th day	41.7
Al.	0.30 Gm. as bismuth salicylate.....	900	2,000, 12th day 2,250, 24th day	122.0 150.0

* Maximum urine output.

Uncontrolled Fluid Intake.—The results in chart 1 indicate that the urine output increased *pari passu* with the excreted bismuth in the urine. The optimum diuresis coincided with the peak of bismuth excretion. Generally, though not invariably, the diuresis diminished as the excretion of bismuth decreased. All of this was true of the bismuth metal as well as of the tartrate and salicylate compounds, and therefore the cause of the diuresis was the bismuth ion. The quantities of the tartrate and salicyl ions present would not be sufficient to cause diuresis.

The dosage, which is expressed as metallic bismuth, varied considerably. The greatest range of dosage tried was with the metallic bismuth. The data in table 1 indicate that the diuresis increased with the increase in dosage, though not proportionally. The variation in individual responses and also in the urine output before bismuth could not be expected to permit more than a rough approximation between the increases in dosage and diuresis, but there is no doubt that higher or repeated doses are more effective than small or single

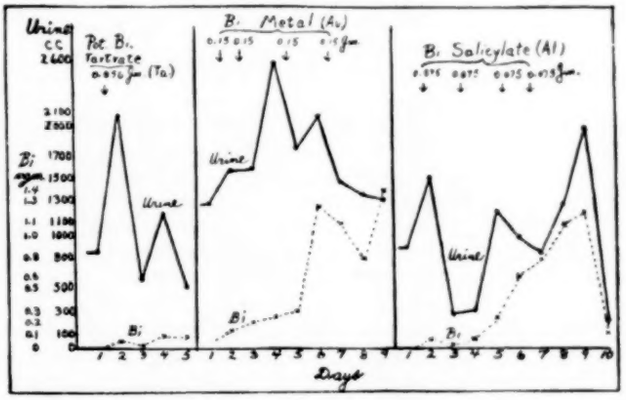


Chart 1.—Typical curves of bismuth diuresis and excretion after intramuscular injection of bismuth in human subjects on uncontrolled fluid intake. In the charts, Bi indicates bismuth; broken line indicates bismuth in urine.

doses. The number of trials with the tartrate and salicylate is too small to warrant conclusions. Tentatively, it appears that equivalent doses (in bismuth ions) of bismuth tartrate and salicylate are more effective diuretics than the metallic bismuth. However, confirmation is needed under controlled conditions. It is obvious in any case that the bismuth preparations tried caused impressive increases in diuresis, ranging from 31 to 150 per cent above the urine output before medication.

Constant Water Intake.—The results in chart 2 show conclusively that the intramuscular injection of the bismuth preparations used invariably caused increases in urine output. Definite though moderate increases were demonstrated with single doses of the preparations. The increases were decidedly greater with, though not proportional to, the increase in dosage. The effects of all doses were temporary, lasting about a day. When the urine output returned to the previous level it could be increased on reinjection of the bismuth. It would appear that three doses of a bismuth product, when spaced a day apart, would give an optimum diuresis. These results, therefore, confirm those obtained with the subjects on uncontrolled fluid intake.

In subjects Fy, Ss, and Dy, attempts were made to determine the time of onset of the diuresis by making

* From the Neurological Division of the Department of Medicine and the Department of Pharmacology, Stanford University School of Medicine.

1. Mehrtens, H. G.; Hanzlik, P. J., and Marshall, D. C.: Proc. Soc. Exper. Biol. & Med. **25**: 276, 1928.

four-hour collections of urine after administration of the different bismuth preparations. Definite increases in the output of urine were demonstrable at the end of from twelve to sixteen hours after administration of the bismuth. The peak of diuresis was reached at the end of forty-eight hours, and at the end of the fourth day the output had returned to the previous level. At the end of this time more bismuth was being excreted into the urine than during the diuresis phase. In other words, the diuresis stopped when there was still an adequate concentration of the metal circulating through the tissues and kidneys. This suggests that

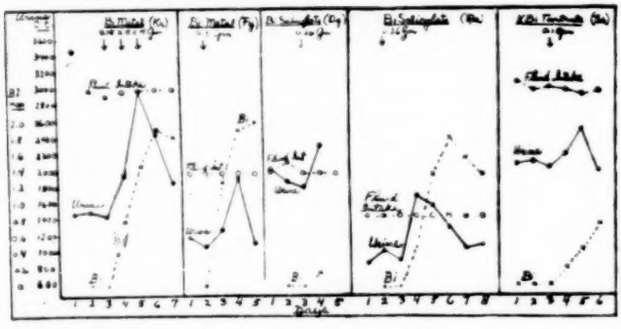


Chart 2.—Bismuth diuresis and excretion in human subjects on controlled fluid intake after bismuth preparations intramuscularly.

the tissues quickly lose their responsiveness to the bismuth. The diminution in the diuresis could not be ascribed to renal functional injury, to be discussed farther on. An explanation of these peculiarities is not at hand. The mechanism of the diuresis will require further study. It may be similar to that of mild mercurous chloride and merbaphen, which, according to some, cause diuresis through an action on the tissues. It has been asserted that mild mercurous chloride acts as a diuretic only in dropsy and not in normal subjects. If this is true, bismuth would appear to have an advantage, since it acts in the absence of edema.

ORAL BISMUTH

The effects of bismuth orally were tested with from 3 to 15 Gm. doses of bismuth subnitrate and subcarbonate in five subjects on a constant fluid intake. Subjects Ml and Bn were healthy ambulatory persons engaged in similar, daily routine work in the laboratory under fairly constant conditions. Subject Fh suffered with tuberculous pleural effusion; subject Rs, with pernicious anemia, and subject Ln, with an undiagnosed gastric condition; all of these patients were in bed. After establishing satisfactory controls of the urine output, the bismuth compounds were given on a fasting stomach and the experiments continued. The diet in each case was practically the same, day after day. All the urines were analyzed for bismuth, but no bismuth was detected at any time, thus indicating doubtful or no absorption of the oxysalts from the intestine. Nevertheless, there were suggestive increases in urine output after the subnitrate. The subcarbonate was tried four times in three different subjects, doses of 3 and 5 Gm. being used, but only one subject responded with a moderate increase in the urine output. These negative results require no further consideration. The results of the eleven trials with the subnitrate may now be summarized.

In 3 and 5 Gm. doses, bismuth subnitrate caused definite increases in diuresis in three subjects (Ml, Bn and Fh). In subjects Ml and Bn, the increases were from 880 to 1,270 cc. and 990 to 1,330 cc., respectively, and were temporary, lasting one day. In subject Fh, the increase was from 1,780 to 2,540 cc. and continued with fluctuations during twelve days. Later administrations of single or multiple doses of the subnitrate in the same subjects left diuresis unaffected. Administrations of 3 Gm. in subjects Bn at another time, and of 5, 10 and 15 Gm. doses in subjects Rs, Fh and Ln, gave negative results, but the intramuscular injection of 0.26 Gm. of bismuth salicylate in subject Rs gave a prompt increase in diuresis of from 850 to 1,800 cc., and bismuth appeared in the urine. Thus the results as to diuresis after oral administration of bismuth subnitrate were nearly equivocal. Chart 3 illustrates the most striking positive result obtained after the subnitrate. The same chart illustrates typical negative results after bismuth subcarbonate and after second and third doses of the subnitrate, and also the changes in blood pressure and pulse rate from the subnitrate.

The circulatory changes indicate something of the possible mechanism of the diuresis, after subnitrate, in the positive cases. In the two subjects that were observed, slight increases in pulse rate with simultaneous small reductions in blood pressure amounting to about 10 mm. of mercury for both systolic and diastolic pressures were observed after bismuth subnitrate, but not after the subcarbonate. These changes occurred simultaneously with the increases in diuresis. A nitrite action appears probable from these circulatory changes. Presumably, the moderate vascular relaxation and cardiac acceleration increased the renal filtration pressure and thus facilitated the diuresis. As the circulatory changes recovered, so also did the diuresis. That it was the nitrite, and not the bismuth, ion which was responsible for the diuresis is further suggested from

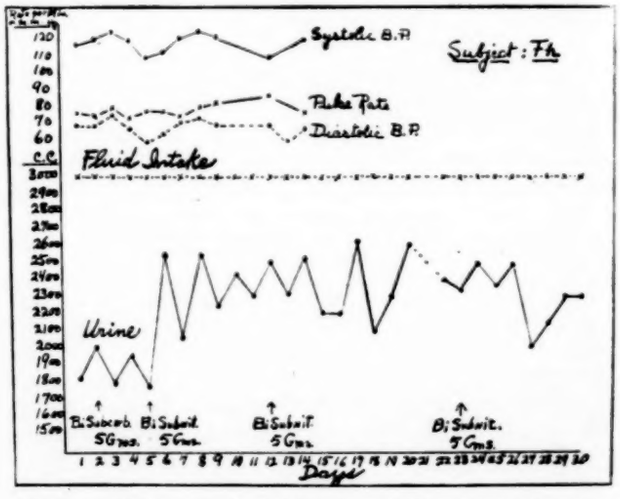


Chart 3.—Effects of oral administration of bismuth subcarbonate and subnitrate on diuresis, blood pressure and pulse rate in subject Fh. B. P. indicates blood pressure.

the fact that the bismuth subcarbonate was ineffective. The coincidences between the various factors are suggestive, to say the least. As to what it is that would cause the liberation of the nitrite ion from bismuth subnitrate is a matter of speculation; presumably the intestinal flora may reduce the subnitrate to nitrite. The occurrence of the nitrite ion following the oral administration of bismuth subnitrate is not new; nitrite poisoning in this way has been reported before.

As against the favorable effects on diuresis just discussed were the negative results with the same and

larger doses of the subnitrate in four subjects, two of whom received only the 10 and 15 Gm. doses. In explanation, several possibilities come to mind: absence of suitable flora for reduction of the subnitrate to nitrite; possible antiseptic or hindering action of the large (10 and 15 Gm.) doses of the subnitrate, thus the medication defeating the desired end (diuresis); deficient absorption, or a combination of these factors.

RENAL CHANGES

Albuminuria.—The urines of all subjects injected with bismuth and those receiving the oxysalts by mouth were regularly tested for albumin and examined for casts and formed elements, but the results were uniformly negative.

Functional Efficiency.—This was tested with phenolsulphonphthalein excreted during two-hour periods before and after administration of the bismuth preparations intramuscularly. The results in table 2 indicate

TABLE 2.—*Effect of Intramuscular Bismuth on Urinary Excretion of Phenolsulphonphthalein*

Subject	Bismuth Preparation Administered	Phenolsulphonphthalein Excretion (2 Hour), per Cent	
		Before Bismuth	After Bismuth
Kr.	Metal	75	75
Fy.	Metal	80	80
Dy.	Salicylate	80	80
Ss.	Potassium tartrate	80	80
Ws.*	Potassium tartrate	70	75

* Not in chart 2, which contains details for the other subjects.

that the quantitative excretion of the dye was uninfluenced by the administration of bismuth. Therefore, so far as this test is concerned, the renal functional efficiency was not impaired, which is in agreement with the negative results on albuminuria.

The absence of demonstrable injury to the kidney, according to the criteria employed, is favorable, if anything, to the therapeutic use of bismuth as a diuretic. The result might be different if bismuth administration were continued over long periods, but it is unlikely that long continued administration would be practiced in its use as a diuretic. Therefore, under conditions of practical usage it is believed that bismuth would be a relatively safe diuretic.

COMMENT

Our results show conclusively for the first time that injected bismuth acts as a diuretic. They agree with the statements of Blum,[2] Molnar[3] and Robitschek,[4] who reported certain clinical results without controls of fluid intake. Blum's report dealt with apparently a single subject, but without mention of the bismuth preparation used. Blum reported a considerable diuresis with increased excretion of sodium chloride, and he suggested that the bismuth diuresis was due to renal stimulation. Molnar used dipotassium bismuth tartrate and reported results on two patients with edema and claimed three other cases without giving details. The two patients who were treated responded with very marked increases in urine output (from 900 cc. before, up to 3,500 cc. after, bismuth) and their body weights were markedly reduced after injections of the bismuth product at one to three day intervals. Molnar prefers bismuth to merbaphen as a diuretic. Robitschek reported favorable effects in nineteen patients after the use of several trade-marked preparations of bismuth. These gave successful results after unsuccessful trials with other drugs in the same patients, the diuresis reaching 4,900 cc. daily. Robitschek states that diuresis from bismuth was first demonstrated in 1792 by Reil and Kercksig, who used rabbits. The results, it is stated, are described in a Latin dissertation by Kercksig, but this was not available to us.

As to diuresis from oral administration of bismuth, our results indicate a possible, though variable and undependable, occurrence of this action after administration of the subnitrate. In view of the nonabsorption of the metal, the diuresis would appear to be a nitrite and not a bismuth action, occurring in virtue of suitable intestinal flora. The circulatory changes observed were consistent with nitrite action. Attempts to establish a relationship between the bacterial flora and diuretic action would carry us beyond the scope of our work, and we must content ourselves with the results in their present form. Administration to a large number of patients would help to settle the matter. If ultimately the diuretic action of bismuth by mouth is sustained, the oral administration would obviously be more practical than intramuscular injection of bismuth, and the possibilities of bismuth poisoning would be reduced to negligible proportions.

We have not observed toxic manifestations from the oxysalts by mouth, or from injected bismuth. This is in agreement with the negative results of Steinfeld[5] on cats, which received from 4 to 8 Gm. of the subnitrate gastrically. Steinfeld could not detect any bismuth in the urine. Working with human subjects, G. Bernard[6] reported the excretion of bismuth in urine after an oral dose of 10 Gm. of the subnitrate, but our results on five subjects do not sustain this. Bernard also reported increased absorption of bismuth after administering cultures of the lactic acid bacillus.

The nitrite circulatory effects observed by us with the bismuth subnitrate agree with the statements of E. J. Stieglitz.[7]

CONCLUSIONS

1. Intramuscular injection of bismuth as the metal in dextrose solution, or potassium tartrate or salicylate in oil, causes definite and prompt diuresis in human subjects.

2. This action is due to the bismuth ion, and, in ordinary doses at least, such as are used in the treatment of syphilis, diuresis occurs without demonstrable injury to renal functional efficiency.

3. Oral administration of from 3 to 5 Gm. of bismuth subnitrate, but not the subcarbonate, may cause an increase in diuresis, although the action is variable and undependable. Further trial on a large number of subjects is desirable to settle the matter definitely.

4. Any diuresis after oral administration is probably due to a nitrite action as indicated by the absence of bismuth excretion, and the presence of simultaneous and typical, though moderate, nitrite effects on the circulation.

5. There were no demonstrable toxic manifestations from the injected bismuth, or with the oxysalts by mouth.

6. The results with bismuth intramuscularly clearly indicate its trial in the treatment of clinical edemas; those with the subnitrate by mouth render the outcome unpredictable.

2. Blum: Compt. rend. Soc. de biol. **88:** 461, 1923.
3. Molnar, A. L.: Klin. Wchnschr. **4:** 1287 (June 25) 1925.
4. Robitschek, W.: Med. Klin. **22:** 1034 (July 2) 1926.
5. Steinfeld: Arch. f. exper. Path. u. Pharmakol. **20:** 40, 1886.
6. Bernard, G.: These de Paris, 1923.
7. Stieglitz, E. J.: J. Pharmacol. & Exper. Therap. **32:** 23, 1927.

SIZES OF RESECTED GASTRIC ULCERS AND GASTRIC CARCINOMAS*

WALTER C. ALVAREZ, M.D.
AND
WILLIAM CARPENTER MacCARTY, M.D.
ROCHESTER, MINN.

For years, MacCarty, Carman and others at the Mayo Clinic have been saying that any chronic gastric ulcer (not duodenal) with a crater more than 2.5 cm. in diameter is probably the seat of cancerous change. Obviously, the statement is a most important one because, if true, the differentiation of ulcer and cancer will often be greatly facilitated, and the finding by the roentgenologist of a large crater will immediately warn the clinician not to waste time on medical treatment.

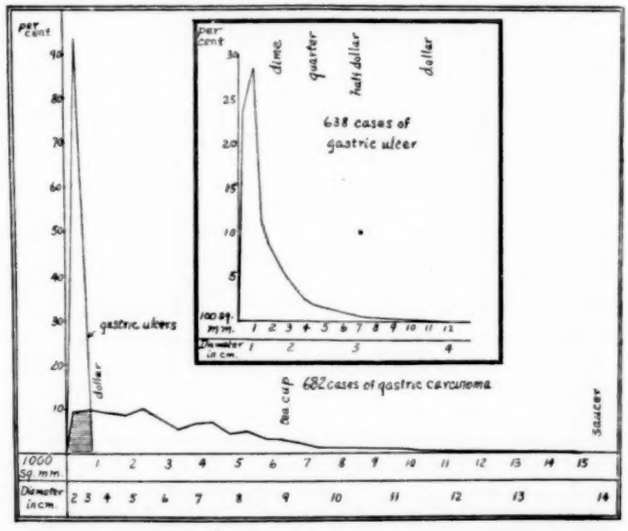
In actual practice this guide to diagnosis has proved useful, and as years pass and experience accumulates, the physicians at this clinic become more and more impressed with the dangers of delaying operation in the case of large gastric ulcers, and more and more puzzled over the fact that most gastro-enterologists have not yet come to the same point of view. Everywhere one finds well trained men treating gastric ulcer with the usual Sippy method, and stating that, so far as they know, their patients rarely succumb later to carcinoma. Is their material different; are they talking about patients with duodenal ulcer, or with small gastric ulcers and long histories; is their follow-up system defective, or are we at the Mayo Clinic labeling benign lesions as malignant?

Since moving to Rochester one of us (Alvarez) has become greatly interested in this problem and more and more desirous of examining the data and so arranging them that he could come to some conclusion. At first sight it might seem that a man who for eighteen years had been seeing a large number of patients with gastric disease should already have had an opinion, but the following calculation will show why he did not.

The difficulty is that gastric ulcer, as distinguished from duodenal ulcer, is a comparatively rare disease. In 1926, at the Mayo Clinic, with a registration of 71,675, the roentgenologists diagnosed gastric ulcer (or multiple gastric and duodenal ulcer) in 270 patients. One hundred and ten of these (one in 650 registrations) were operated on and the lesion removed and made available for microscopic study. Only eleven of the ulcers removed were more than 350 sq. mm. in area (a little more than 2 cm. in diameter) and, as will be brought out later, these were the ones which required the closest scrutiny. During the same period the roentgenologists diagnosed carcinoma of the stomach in 375 patients and reported indeterminate lesions in forty-seven more. A little more than half of these patients were operated on, and twenty-four of the lesions removed were found to be less than 3 cm. in diameter. There were, then, during the year, thirty-five cases in which the pathologist had to be particularly careful in distinguishing between a benign and a carcinomatous lesion. This represents an incidence of one in 2,050 registrations. If a similar ratio holds in private practice, then a physician who studies, let us say, 700 patients a year and who induces about half of those presenting gastric lesions to be operated on by surgeons competent to do a resection will see one large ulcer or small cancer every three years. Under such circumstances, with the lessons few and far between, he cannot possibly be impressed by them in the way that we are who have to cope with the problem once in every ten days, and he cannot be expected to have any strong convictions on the subject.

If, then, the matter so seldom forces itself on the attention of the physician in private practice, why should he bother about it? The answer is that he must be concerned with it because it has such an important bearing on the serious problem of getting hold of the patient with cancer of the stomach before the condition is inoperable. According to McVicar and Daly,[1] at the Mayo Clinic, in the five years from 1920 to 1924, inclusive, 2,078 patients were seen with carcinoma of the stomach; 1,494 had to be sent home without hope, and sixty-nine refused operation or put it off, so that in only 524 was resection performed.

Day after day, as one sees these unfortunate patients, one wonders whether there is not some way in which they can be reached earlier. In many cases the difficulty has been that the patient did not feel sick enough to go to a physician until the disease was far advanced;



Percentage distribution curves showing size of gastric ulcers and gastric carcinomas. Inset: distribution curve, according to size, of gastric ulcers, drawn to a larger scale.

no one then is to blame and it is hard to see how, in the future, matters can ever be much improved. In other cases, however, the medical profession is probably to blame, because when the patient comes for surgical help the hopelessness of the situation appears to be due to the fact that for weeks and months some intelligent physician or well trained gastro-enterologist treated him for what was assumed to be transient indigestion or benign ulcer.

One does not have to be long at the Mayo Clinic to learn that when one of the consultants asks a patient with gastric ulceration to submit to a resection he does so, not because he fears that cancer will later develop in the margins of the lesion, but because he has no way of assuring himself that it is not already there. He is not activated, as some critics suppose, by belief in a debatable hypothesis but by the remembrance of innumerable cases in which roentgenologists and clinicians, finding a gastric lesion, guessed wrongly at its nature, and, in so doing, snatched away what little chance of recovery the patient had.

* From the Division of Medicine and the Section on Surgical Pathology, Mayo Clinic.
* Read before the Gastro-Enterological Association, Washington, D. C., April 30, 1928.

1. McVicar, C. S., and Daly, Joseph: The Diagnosis of Operable Carcinoma of the Stomach, Ann. Int. Med. **1**: 145-160 (Sept.) 1927.

THE SIZES OF GASTRIC ULCERS AND GASTRIC CARCINOMAS

Seeing is always more convincing than hearing, so in the inset in the accompanying chart we have drawn the curve that represents the percentage distribution, according to the size of the crater, of 638 gastric ulcers removed at St. Mary's Hospital (Mayo Clinic) in the years 1920 to 1927, inclusive. Table 1 shows the distribution year by year. Some "smoothing" was done in the final curve to remove "humps" produced by the common tendency of observers to read scales to the nearest multiple of ten. The measurements were taken first from the surgical pathologist's reports; whenever there was any doubt the figures were compared with those given by the surgeon, and if the two disagreed materially the tissue was recalled from the museum and remeasured. Even with this care, doubt remained about a few cases and their records were omitted.

We have excluded from consideration all recurrent and gastrojejunal ulcers because they constitute a problem by themselves, and we have excluded those benign ulcers occasionally found in association with carcinomatous ulcers. In such cases the area of the carcinomatous ulcer has been listed with those of the other carcinomas. When, as commonly happened, two or more ulcers were present in a stomach, the measurements of the largest one were taken. Cases of gastric ulcer with associated duodenal ulcer are included, but those with ulceration in stomachs definitely syphilitic have been excluded.

TABLE 1.—*Sizes of Ulcers of the Stomach Removed at St. Mary's Hospital (Mayo Clinic) from 1920 to 1927 Inclusive* *

Areas, Sq. Mm.	Ulcers 1920	1921	1922	1923	1924	1925	1926	1927	Totals	Totals Smoothed	Per Cent	Per Cent Cumulated
1– 49	20	11	14	12	19	27	33	14	150	150	23.5	23.5
50– 99	17	14	18	31	21	29	31	19	180	180	28.2	51.7
100– 149	7	4	4	5	10	6	6	18	60	74	11.6	63.3
150– 199	6	5	9	14	17	9	16	14	90	55	8.6	71.9
200– 249	7	3	4	4	4	..	5	8	35	44	6.9	78.8
250– 299	1	2	1	..	..	..	..	2	6	31	4.9	83.7
300– 349	7	5	5	6	8	11	8	3	53	26	4.1	87.8
350– 399	4	1	1	2	2	..	..	1	11	15	2.4	90.2
400– 449	1	1	1	..	1	1	..	..	5	13	2.0	92.2
450– 499	2	2	1	1	3	1	2	..	12	10	1.6	93.8
500– 549	1	1	1	..	1	..	3	..	7	8	1.3	95.1
550– 599	..	..	..	..	..	..	..	..	..	7	1.1	96.2
600– 649	3	2	2	1	2	..	1	1	12	5	0.9	97.1
650– 699	..	..	..	..	..	..	..	..	..	5	0.8	97.9
700– 749	3	..	..	1	..	..	3	..	7	2	0.3	98.2
750– 799	..	..	..	..	1	..	..	..	1	2	0.3	98.5
800– 849	..	..	..	..	..	..	..	..	..	2	0.3	98.8
850– 899	..	..	..	..	..	..	..	..	..	2	0.3	99.1
900– 949	2	1	..	1	..	..	1	..	5	2	0.3	99.4
950– 999	..	..	..	1	..	..	..	..	1	2	0.3	99.7
1,000–1,049	1	..	..	..	..	..	..	..	1	1	0.1	99.8
1,050–1,099	..	..	..	..	..	..	..	..	..	..	....	....
1,100–1,149	..	..	..	..	..	..	..	..	..	..	....	....
1,150–1,199	..	..	..	..	..	..	..	..	..	1	0.1	99.9
1,200	..	..	..	..	1	..	1	..	2	1	0.1	100.0
Totals	82	52	61	79	90	84	110	80	638			

* Taken from copies of reports filed in the laboratory of surgical pathology.

It is obvious from the inset in the chart that excised gastric ulcers are comparatively small; in fact, 79 per cent of them are smaller than a dime (1.8 cm. in diameter), and 92.3 per cent are smaller than a quarter (2.4 cm. in diameter). In the eight years covered by this study no excised benign ulcer was seen over 1,200 sq. mm. in area (4 cm. in diameter), so, if the histologic diagnoses were correct, this would seem to be the outside limit of size for such lesions. Unfortunately, we cannot be sure of the exact configuration of the right hand end of the curve for the size of ulcers because the surgical pathologist does not get to see some of the larger lesions, marked benign on the records for lack of definite evidence to the contrary. In 20 per cent of the cases listed as gastric ulcer, excision or resection is not attempted, generally because the lesion is high on the stomach and firmly attached to surrounding structures.[2] In such cases the presence of carcinoma cannot be ruled out, and only as one follows the subsequent history of the patient does one get more

TABLE 2.—*Sizes of Carcinomas of the Stomach Removed at St. Mary's Hospital from 1920 to 1927 Inclusive* *

Areas, Sq. Mm.	Carcinomas 1920	1921	1922	1923	1924	1925	1926	1927	Totals	Per Cent	Per Cent Smoothed	Per Cent Cumulated
1– 249	4	1	3	6	1	4	9	7	35	5.1		
250– 499	2	2	1	2	4	3	6	6	26	3.8	8.9	8.9
500– 749	5	5	6	2	5	7	9	1	40	5.9		
750– 999	5	1	4	2	2	3	3	7	27	4.0	9.9	18.8
1,000– 1,249	4	1	4	2	6	2	7	4	30	4.4		
1,250– 1,499	6	2	4	3	5	5	4	3	32	4.7	9.1	27.9
1,500– 1,749	5	4	4	6	3	7	2	9	40	5.9		
1,750– 1,999	2	2	4	2	1	4	3	2	20	2.9	8.8	36.7
2,000– 2,249	12	3	5	2	4	5	5	7	43	6.3		
2,250– 2,499	3	..	4	2	2	3	6	3	23	3.4	9.7	46.4
2,500– 2,749	4	3	4	3	4	2	3	6	29	4.3		
2,750– 2,999	1	..	3	2	..	8	..	10	24	3.5	7.8	54.2
3,000– 3,249	4	6	3	2	1	3	2	9	30	4.4		
3,250– 3,499	1	..	2	1	..	..	1	..	5	0.7	5.1	59.3
3,500– 3,749	9	..	2	6	1	1	3	7	29	4.3		
3,750– 3,999	3	2	..	1	3	2	..	1	12	1.8	6.1	65.4
4,000– 4,499	9	5	3	5	4	2	10	7	45	6.6	6.6	72.0
4,500– 4,999	7	3	3	3	..	1	6	5	28	4.1	4.1	76.1
5,000– 5,499	8	2	3	3	5	2	4	3	30	4.4	4.4	80.5
5,500– 5,999	6	2	2	3	1	2	2	4	22	3.2	3.2	83.7
6,000– 6,499	5	2	2	..	2	5	4	2	22	3.2	3.2	86.9
6,500– 6,999	1	1	1	1	2	..	1	1	8	1.2	2.0	88.9
7,000– 7,499	3	1	2	1	1	1	2	..	11	1.6	1.2	90.1
7,500– 7,999	1	..	1	..	..	..	..	2	4	0.6	1.2	91.3
8,000– 8,499	5	..	5	..	1	1	3	3	18	2.6	1.2	92.5
8,500– 8,999	..	..	..	1	2	..	1	..	4	0.6	1.2	93.7
9,000– 9,499	2	1	1	2	1	..	1	2	10	1.5	1.2	94.9
9,500– 9,999	1	1	2	2	..	3	1	..	10	1.5	1.1	96.0
10,000–10,499	..	1	1	..	..	1	..	..	3	0.4	0.8	96.8
10,500–10,999	..	..	..	..	1	..	..	..	1	0.2	0.6	97.4
11,000–11,499	4	..	..	..	..	1	1	..	6	0.9	0.5	97.9
11,500–11,999	..	..	1	..	..	..	..	..	1	0.2	0.4	98.3
12,000–12,499	1	1	..	1	..	..	2	..	5	0.7	0.4	98.7
12,500–12,999	..	..	..	..	..	..	..	..	..	..	0.4	99.1
13,000–13,499	2	..	..	1	1	1	..	..	5	0.7	0.3	99.4
13,500–13,999	..	..	1	..	..	..	..	..	1	0.2	0.3	99.7
14,000–14,499	..	1	..	..	..	..	1	..	2	0.3	0.1	99.8
14,500–14,999	..	..	..	..	..	..	..	..	..	..	0.1	99.9
15,000	..	..	1	..	..	..	..	..	1	0.2	0.1	100.0
Totals	125	53	82	67	63	79	102	111	682			

* Taken from copies of reports filed in the laboratory of surgical pathology.

hints as to the true nature of the lesion. Some of these unresected ulcers must be benign; many are large, and if their measurements could be included in table 1, the right hand end of the curve for ulcer size would have to be redrawn.

It was interesting to note in the reports that the measurements of benign ulcers are generally given in millimeters while those of carcinomas are in centimeters. This big difference in size makes it so difficult to show, on the same chart, the distribution curves for the two types of lesions that we resorted to the device used in the chart. There the distributions of ulcers and carcinomas were first drawn to a small scale and superimposed to show the region in which they overlap, and then that of the benign ulcers was drawn, in the inset, to a larger scale to show details.

Table 2 shows the percentage distribution, according to size, of the carcinomas. It will be seen from this table and from the long flat curve in the chart that although most of the resectable carcinomas have diameters less than that of a teacup (9 cm.) there are a few almost as large as a saucer (14 cm. in diameter). Highly important is the fact that 23 per cent of them lie within the shaded area where the distributions of ulcers and carcinomas overlap.

2. Balfour, D. C.: The Relative Merits of the Various Treatments of Peptic Ulcer, Minnesota Med. **8**: 218-224 (April) 1925.

ACCURACY OF THE DATA

We realize that we cannot ask any one to accept the deductions that are to be drawn from the data represented in the chart unless we can first satisfy ourselves that the labeling of ulcers and carcinomas was done with a fair degree of accuracy. In other words, if the suspicion should linger that the carcinoma distribution curve is padded out with cases of benign ulcer erroneously diagnosed, whatever we might say would have to be said hesitatingly and unconvincingly. Since a problem is always less formidable and more certain of solution when stripped of all those parts about which there can be no controversy, we will temporarily exclude from discussion all carcinomas more than 4 cm. in diameter and all ulcers less than 3 cm. in diameter. Differences of opinion will seldom arise in the diagnosis of lesions more than 4 cm. in diameter, because most of them are definite tumors the nature of which is fairly obvious to clinician, roentgenologist, surgeon and pathologist. If there is to be disagreement it must come in the labeling of the smaller lesions, the dimensions of which fall within the shaded area in the chart. There the fields of benign and malignant lesions overlap; there the pathologist had to make close decisions, and there we are likely to find cases in which he was mistaken or in which many of his confrères would have rendered another opinion. Similarly in the group of lesions called benign, mistakes are most likely to be found in the records of those more than 3 cm. in diameter.

Accordingly, one of us (Alvarez) has carefully studied the records of every patient seen in the eight years with a "benign ulcer" more than 700 sq. mm. in area (about the size of a half-dollar) and every patient with a carcinoma or "carcinomatous ulcer" less than that size. (Actually, all less than 750 sq. mm. were studied.) With the help of Dr. Balfour's excellent follow-up service, reports were obtained from all but one or two of the patients who were operated on more than a year ago and who recovered from the operation.

ULCERS WITH AREAS OF FROM 700 TO 999 SQ. MM.

In the eight years there were only fifteen ulcers resected with areas between 700 and 999 sq. mm. One (case 1) has been excluded from the distribution chart because it was one of many ulcers in what appeared to be a syphilitic stomach.

CASE 1.—The microscopic appearance of the tissues suggested syphilis; the Kolmer test was positive, and there was no free acid in the gastric contents. Fourteen months later the patient was in fair health but a year or so later she died, just when or of what we have not been able to learn.

Case 2 was left on the list although the microscopic appearance of the tissues suggested syphilis.

CASE 2.—A man, aged 36, with a history dating back six months, was well when last heard from, five years after resection of the ulcer. The Wassermann reaction was negative.

CASE 3.—A man, aged 66, who was operated on in June, 1926, gave a short history of indigestion. The clinical diagnosis was cancer of the stomach. He is still alive and well.

CASE 4.—A woman, aged 64, seen in 1926, had for many years shown symptoms typical of ulcer. However, there was no free acid in the stomach and the roentgenologist diagnosed carcinoma. Fifteen months after operation she was well.

The other eleven cases (cases 5 to 15, inclusive) show little that needs comment. All of the patients have been heard from for at least a year after operation, and all were then in fair or good health.

ULCERS WITH AREAS MORE THAN 1,000 SQ. MM.

In the eight years there were only nine supposedly benign ulcers excised with an area of 1,000 sq. mm. or more, but one has been removed from the list because it was found in what was almost certainly a thickened syphilitic stomach, and five have been transferred to the list of carcinomas for reasons that we shall now discuss.

CASE 16.—A man, aged 36, came to the clinic with symptoms suggesting that for eight years a peptic ulcer had been present. There was no free acid; the Wassermann reaction was positive, and the spinal fluid was abnormal. Operation revealed a thickening of the pyloric end of the stomach, and the pathologist reported multiple ulcers, the largest 4 cm. in diameter. Resection was done, and two years later, after intensive antisyphilitic treatment, the man was well.

CASE 17.—A woman, aged 61, had shown symptoms of indigestion for eight months. The clinical diagnosis of carcinoma of the stomach was apparently confirmed at operation, but careful histologic study of the lesion did not show any sign of cancer. Three years later the symptoms returned; the home physician diagnosed recurrent carcinoma, and the son shot and killed his mother to put an end to her suffering.

CASE 18.—A man, aged 40, had suffered for twenty years with indigestion. In 1920 duodenal ulcer was diagnosed and the home surgeon made a gastro-enterostomy. As symptoms returned in a few months, the patient came to the Mayo Clinic and an apparently benign gastric ulcer, 4 cm. in diameter, was excised. Five months later he returned with generalized carcinomatosis.

CASE 19.—A man, aged 54, who for six years had suffered with symptoms of ulcer, had an attack of bleeding from the stomach five years before coming to the clinic. At operation an apparently benign ulcer 1,500 sq. mm. in area was removed, together with a carcinoma of the cecum. A year and a half later the patient died, and his physician wrote that death was due to cancer of the stomach. He may, of course, have been mistaken; the gastric ulcer may have been benign and the carcinomatosis may have come from the cecum.

CASE 20.—A man, aged 30, came to the clinic in 1924 with a vague story of indigestion which had troubled him for two years. At operation the surgeon found a mass at the pylorus "the size of a lemon." This was removed and the pathologist reported a benign ulcer 3.5 cm. in diameter. Taking into account the appearance of the lesion and the fact that the man died fourteen months later, we strongly suspect that further histologic study would have shown malignant changes.

CASE 21.—A woman, aged 55, came to the clinic in 1924 with a short history of symptoms suggestive of cancer of the stomach. Gastric acids were normal but the clinical and roentgenologic diagnosis was cancer. At operation the pars pylorica was found attached to the anterior abdominal wall, liver and transverse colon. The surgeon succeeded in separating the adhesions and removing the lower half of the stomach, and the pathologist reported a shallow ulcer 5 cm. in diameter, with an extensive, diffuse, fibrotic submucosa 1.5 cm. in thickness. A malignant condition was not found. The patient returned ten months later with a large nodular mass in the pelvis and seven months after this she died. Although necropsy was not performed, the clinicians who saw the patient had no doubt about the presence of carcinoma.

CASE 22.—A woman, aged 61, in December, 1922, suddenly bled from the stomach without previous symptoms of indigestion. After that she suffered with the usual symptoms of ulcer until June, 1923, when her home physician on exploration found what he thought was hopeless carcinoma and made a gastro-enterostomy. Nine months later when she came to the Mayo Clinic a large perforated ulcer was removed, and four years later she was in good health.

CASE 23.—A man, aged 36, had had symptoms of ulcer for perhaps ten years. The roentgenologists and clinicians disregarded the presence of normal gastric juice and diagnosed pyloric carcinoma. The surgeon found a large ulcer, and the man is alive seven years after the operation.

CASE 24.—A man, aged 42, after ten years of symptoms suggesting the presence of peptic ulcer, was operated on and a large crater was removed. Two years later he was well.

We can say, then, that the eight patients from whom unusually large but apparently benign ulcers were removed, five have died with what appeared to be carcinoma. The finding of so many carcinomas in this small group throws doubt on the correctness of the diagnosis in some of the cases of large ulcer in which the patients appear to have recovered, and it may be that the limit of size for benign lesions is even smaller than the one given here. As already pointed out, the problem is complicated somewhat by the fact that the pathologist fails to see a number of large indeterminate lesions which are examined at operation but are not excised. Ordinarily, with 80 per cent of a group of data available for study, a statistician has little worry about drawing conclusions in regard to the constitution of the material as a whole, but in this case several factors may enter in to alter the sampling and to affect the proportion between ulcers and carcinomas.

The surgeon occasionally describes an ulcer as being 5 or 6 cm. in diameter, but these estimates, made with the help of palpation alone, are probably too high. In a large series of cases we have compared such measurements dictated by the surgeon with the more accurate ones made later in the laboratory, and in many instances it appears that the surgeon was talking about the plaque of thickened inflamed tissue extending out beyond the ulcer while the pathologist was concerned only with the dimensions of the crater. Not infrequently the plaque is due to the presence of several ulcers. With all this, it may well be, however, that the surgeon is often more nearly right than the pathologist because the latter received a piece of stomach that shrank as soon as it was cut away from its surroundings. The pathologist might answer that the surgeon deals with a stomach made flabby by the anesthetic and that only the roentgenologist sees normal tonic stomachs. This is probably true; but, as will be pointed out again, the roentgenologist cannot always see the crater clearly enough to measure it.

CARCINOMAS WITH AREAS LESS THAN 750 SQ. MM.

In the eight years, 102 "carcinomas" or "carcinomatous ulcers" with areas less than 750 sq. mm. were removed (these represent 15 per cent of the 682 carcinomas). Incidentally, it must be emphasized here that the few lesions (thirty-nine seen in the last eleven years) with "secondary cytoplasia" (MacCarty and Broders,[3] and MacCarty [4]) as the only suspicious sign of carcinoma were classified as benign. This is important, because some critics seem to have the idea that carcinomas at St. Mary's Hospital are commonly being diagnosed on the basis of criteria not considered valid by all pathologists. This is not true.

Probably the most convincing bit of evidence to show that the diagnosis of carcinoma was correct in most of the 102 cases is the fact that, of the sixty-eight persons who were operated on before Dec. 31, 1925 (the reason for temporarily excluding records of patients operated on in 1926 and 1927 is that the end-results are not yet known), and who survived the operation, three returned with general carcinomatosis, sixteen died of "cancer," two died with symptoms suggesting a recurrence and fifteen more are known simply to have died. It is highly probable that in them also the cause was cancer, because almost all died within a year and a half after operation, the period in which recurrences commonly kill.

Thirty-six, then (52.7 per cent), of those persons who would seem, from the unusually small size of the carcinoma, to have had a good chance for life, have died. It is perhaps worth noting that the highest mortality (62.5 ± 6.7 per cent) occurred in the twenty-four patients whose symptoms had been present less than a year (suggesting carcinoma); in the others, with longer histories, the rate was 47.7 ± 5.0 per cent. The difference of 14.8 ± 8.4 per cent cannot be stressed, because it is not quite twice its probable error, and the chances are only 3.4 to 1 that it is significant.

CASES IN WHICH THE DIAGNOSIS IS QUESTIONABLE

Going over the cases one by one and taking into consideration the recurrences and deaths, the age of the patient, the type and length of the history, the appearance of the lesion with the roentgen ray and at the time of operation, the amount of acid in the stomach, and the diagnoses made by consultants, we have come to the conclusion that there is not much doubt about the cancerous nature of the lesion in sixty-eight of the 102 cases. In three of the remaining thirty-four, further information cannot be looked for as the patients died from postoperative accidents such as pneumonia and peritonitis. Necropsy in two cases failed to throw light on the problem. A study of the thirty-four doubtful cases suggests that in eighteen the lesion was probably malignant, so only sixteen are left in which one might seriously question the verdict of the pathologist. Doubtless a number of these problems will be solved in the next two years as we hear from the thirteen patients (of the thirty-four) operated on in 1926 and 1927.

If, after excision of a gastric ulcer, the patient returns with the abdomen full of nodular masses, one can be fairly sure that the pathologist made a mistake; but if malignant changes are found in the edge of a typical ulcer and, after a subtotal gastrectomy, the patient remains well, one has no means of telling whether the histologic diagnosis was right or wrong. Ordinarily, with small early lesions without glandular involvement, one would expect at least half of the patients to remain well, but since in the group of 102 patients with small "carcinomas" glands were involved in thirty-one, we had to expect, from data given by Balfour and Hargis,[5] a late mortality of about 60 per cent. Since it is already 52.7 per cent in the group of sixty-eight patients operated on before 1926, it looks as if the diagnosis had been made with a high degree of accuracy, and certainly there is little room left in this group of borderline lesions for patients with benign ulcer erroneously called carcinoma.

Fortunately there is still another way of finding out whether one of us (MacCarty), with his own highly sensitive technic, tends to diagnose carcinoma more often than he should. During the years 1924, 1925 and 1926, MacCarty and Broders dipped into the same material, MacCarty examining 401 gastric lesions and Broders 189. (These numbers are a little larger than those given in tables 1 and 2 because cases are included in which the lesion was too diffuse for accurate measurement.) The former diagnosed carcinoma in 47.7 ± 1.7 per cent; the latter, in 47.5 ± 2.4 per cent.

3. MacCarty, W. C., and Broders, A. C.: Chronic Gastric Ulcer and Its Relation to Gastric Carcinoma: Review of Six Hundred and Eighty-Four Specimens, Arch. Int. Med. **13**: 208-223 (Feb.) 1914.

4. MacCarty, W. C.: Chronic Ulcer and Carcinoma of Stomach, Am. J. M. Sc. **173**: 466-472 (April) 1927.

5. Balfour, D. C., and Hargis, E. H.: Cancer of Stomach, Am. J. M. Sc. **173**: 773-780 (June) 1927.

Since there is no difference between these figures, we must conclude that neither observer has any strong bias. If either one or both had such bias, one would expect to find them diagnosing carcinoma in some at least of the 425 duodenal ulcers excised during the eighteen and a half years between January, 1906, and June, 1924, but in all that time they did not find anything that even excited their suspicion.[6]

Still another index to the correctness of the views expressed here might be found in a study of the late mortality (after the patient goes home) in the cases of "gastric ulcer" in which gastro-enterostomy is the only operation performed. It would be interesting also to study the late mortality after operations for large ulcers as compared with that after operations for small ones. Work done by Balfour in 1922 and by Hunter[7] has shown clearly that the late mortality of patients operated on for gastric ulcer is much higher than it is in a control group of patients operated on for duodenal ulcer, but further and more detailed analyses of new data would be helpful. They are needed to answer a question that we cannot go into here, and this is: How *commonly* does carcinoma appear in patients with what is thought by competent men to be gastric ulcer? That seems to be the principal point on which observers differ and on which more work must be done.

THE PROBABILITY THAT AN ULCER WITH A CERTAIN AREA IS CARCINOMATOUS

Knowing the percentage distributions (according to size) of benign and carcinomatous ulcers (that have been excised), one can calculate the probability that an excised lesion with any particular area is benign or carcinomatous. The figures given in table 3 show that, given a lesion smaller than a quarter, the chances (on the basis of size alone) are ten to one that it is benign. If it is larger than a quarter but smaller than a half dollar, the chances are slightly in favor of its being malignant. When it comes to applying these probabilities to gastric lesions as a whole, it must be remembered that our figures are based on a study of perhaps 40 per cent (one half operated on and 80 per cent removed) of the lesions recognized in the clinic, and that this sample is probably more nearly representative in the domain of the small lesions than in that of the large.

Perhaps the first lesson to be derived is that, although the probability is large that a small lesion (less than the size of a dime) is benign, there is that one menacing chance in fifteen that it is malignant, and if this is disregarded a certain number of tragedies must later be expected. In this particular series, with 550 persons presenting lesions less than 1.8 cm. in diameter, there were thirty-five with carcinomas and half of these have apparently been saved by early operation. Against these lives saved must, of course, be set those lost in operating on the 515 benign ulcers. In any one case, the decision in regard to the mode of treatment must depend on a balance between several sets of probabilities.

It would seem as if all carcinomas of the stomach must at some time be as small as a dime or a quarter; it would seem obvious that if we are ever to get a high percentage of permanent cures surgeons must remove the lesions when they are that small, and it seems probable that when the medical millennium arrives, and all persons are examined roentgenoscopically as soon as they begin to go down hill or to suffer from indigestion, the number of small carcinomas seen will be so increased that the ratios between them and benign ulcers will be even more startling than they now are.

TABLE 3.—*Probability that a Gastric Lesion with a Given Area is Benign* *

Areas and Diameters of Lesions in Various Groups	Percentage of All Ulcers Falling in the Group	Percentage of All Carcinomas Falling in the Group	Approximate Probability that a Lesion Sampled From the Group Will Be Benign
1 to 249 sq. mm. in area or 1.8 cm. in diameter (the size of a dime)	78.8	5.1	15.4 to 1
250 to 499 sq. mm. in area or 2.5 cm. in diameter (about the size of a quarter)	15.0	3.8	3.9 to 1
500 to 749 sq. mm. in area or 3 cm. in diameter (about the size of a half dollar)	4.4	5.9	1.0 to 1.3
750 to 999 sq. mm. in area or 3.5 cm. in diameter (about the size of a silver dollar)	1.5	4.0	1.0 to 2.7
1,000 to 1,200 sq. mm. in area or 4 cm. in diameter	0.3	4.4	1.0 to 14.7
Under 500 sq. mm.	93.8	8.9	10.5 to 1
Under 750 sq. mm.	98.2	14.8	6.6 to 1
Under 1,200 sq. mm.	100.0	23.2	4.2 to 1
Between 500 and 1,200 sq. mm.	6.2	14.3	1 to 2.3

* Calculations based on data given in tables 1 and 2.

Even now, as one of us (MacCarty) has pointed out, if acute shallow ulcers with fiery red margins were excluded from consideration, the probability that a crater larger than a quarter is malignant would be found much greater than the figure given here.

Unfortunately, the figures in table 3 cannot be utilized to the fullest extent by the clinician or surgeon because, not infrequently, the roentgenologist is unable to estimate the size of the lesion, and can say only that there is something organically wrong in the stomach. Even when he sees one ulcer clearly, he cannot always be sure that another larger one is not present. Later, at operation, the surgeon will occasionally have difficulty in finding the ulcer, or when he does feel it through the inflamed and thickened gastric wall, he may overestimate its size. Yet, in spite of all these limitations, this criterion of size has, at the Mayo Clinic, proved itself so helpful that hardly a day passes that it is not pressed into use.

PUZZLING QUESTIONS

If, as now seems certain, gastric ulcers have an upper limit of size around 3.5 cm. in diameter, the next question is: Why should this be? Why should a certain limit be set to the destructive action of the gastric juice, and why should this limit be considerably smaller for duodenal than for gastric ulcer? These are some of the many questions that must be answered before any theory of ulcer formation can be accepted as entirely satisfactory. It is a puzzle also why a little increase in the diameter of an ulcer should make it more susceptible to the development of malignant change; or is, perhaps, the ulcer larger because these changes are taking place? So far as we can judge from the histories there is no correlation between the age of an ulcer and its size.

SUMMARY

Gastric ulcers larger than a quarter (2.4 cm. in diameter) or carcinomas smaller than that are so rarely encountered that the physician with an average practice may go several years without seeing one.

6. MacCarty, W. C.: Excised Duodenal Ulcers: A Report on Four Hundred and Twenty-Five Specimens, J. A. M. A. **83:** 1894-1898 (Dec. 13) 1924.

7. Hunter, cited by Balfour, D. C.: Life Expectancy of Patients Following Operations for Gastric and Duodenal Ulcer, Ann. Surg. **70:** 524-525 (Nov.) 1919.

Percentage distribution curves based on areas of 638 gastric ulcers and 682 gastric carcinomas (all resected) show that four out of five benign ulcers are smaller than a dime (1.8 cm. in diameter), and ninety-two out of a hundred are smaller than a quarter (2.4 cm. in diameter). It is doubtful whether benign ulcers (excluding the gastrojejunal, the recurrent, and the syphilitic) ever grow much larger than a silver dollar (3.7 cm. in diameter). Twenty-three per cent of the carcinomas resected at the Mayo Clinic are within the range of size of benign ulcers. On the bases of size alone there is one chance in ten that an ulcer smaller than a quarter is already cancerous; if it is larger than a quarter but smaller than a silver dollar, the chances are perhaps two to one that it is a cancer; if it is larger than a dollar it is almost certainly a cancer.

Of the eight persons seen in the last eight years with histologically "benign" ulcers over 3.5 cm. in diameter, five died under circumstances that suggest the presence of recurrent carcinoma. Of the sixty-eight persons who in the eight years had gastric lesions under 3 cm. in diameter, histologically malignant, and who were watched for at least two years after resection of much of the stomach, more than half have died, many definitely or apparently of cancer. These observations, together with others discussed in the text, show that at the Mayo Clinic the fear of temporizing with gastric lesions can hardly be based on wrong diagnoses; errors naturally occur, but they are not all in one direction and there can hardly be enough of them to alter the conclusions reached in this paper.

THE PRESENT STATUS OF THE ETIOLOGY OF EPIDEMIC ENCEPHALITIS *

JOSEPHINE B. NEAL, M.D.
Director of the William J. Matheson Survey of Epidemic Encephalitis; in charge of the Division of Applied Therapy, Research Laboratory, Department of Health
NEW YORK

The earliest recognized cases in the present outbreak of the disease now known as epidemic encephalitis were described by Cruchet, Moutier and Calmette [1] in 1917 under the name of subacute encephalomyelitis.

During the past ten years an enormous amount of work has been done by scientists in many countries to determine the cause of this disease, so protean in its clinical manifestations and so terrible in its chronic effects.

The scope of this paper permits only briefest reference to many of the theories of etiology that have been advanced, and only a short consideration of the more important studies.

The early conception that it was due to botulism or that it was an atypical form of poliomyelitis has been sufficiently disproved to be dismissed.

There has been much discussion both for and against a relationship between influenza and epidemic encephalitis. This has been based on the more or less coincidental appearance of these two diseases in many places in the recent outbreak; on the possibility of the same relationship as to time having occurred in the past, and on the functional or organic disturbances of the central nervous system sometimes occurring with or following in the wake of attacks of clinical influenza in individuals. In view of the lack of knowledge concerning the etiology of influenza, all this discussion seems to be of an academic rather than a scientific nature. Therefore, no more space will be devoted to it at this time.

There remain for serious consideration three theories, which assume that:

1. It is a toxic disturbance of the central nervous system due to: (*a*) Toxins produced by organisms located probably in the respiratory or gastro-intestinal tract. (*b*) Toxins elaborated as the result of metabolic disturbances.
2. It is caused by cultivable bacteria.
3. It is caused by a filtrable virus.

1. TOXIC DISTURBANCE OF THE CENTRAL NERVOUS SYSTEM

The theory that epidemic encephalitis is a toxic disturbance of the central nervous system is developed partly from positive, partly from negative lines of reasoning. It is well known that very similar clinical and pathologic pictures may be produced by the action on the brain of certain toxins both of bacterial and of chemical origin. This would also fit in very well with the high percentage of negative results obtained in attempts to discover the etiologic agent, either by cultural methods or by animal experimentation.

Martin,[2] in 1918, suggested that a toxin from organisms in the nasopharynx might slowly localize in the central nervous system, producing the lesion. Sainton [3] had already pointed out the frequent occurrence of ulcerative processes in the pharynx resembling those in influenza. A somewhat similar theory was advanced in 1925 by Yates and Barnes,[4] who found in most of their cases evidence of sinus involvement, which they thought increased the permeability of the mucous membrane to toxins or to the virus of encephalitis, and was an important factor in the development of the disease. Salzman [5] in 1924 and in 1925 stated his belief that the disease was due to a toxin, with a selective action on the brain, developed from infections of the gallbladder. He based his opinion on his experiences with several patients, who recovered after operation.

Fuchs,[6] in 1921, produced experimental encephalitis in cats and dogs by means of guanidine and also by feeding meat to dogs following the production of Eck's fistula.

Meyer-Bisch and Stern,[7] in 1923, after studying the disturbance of liver function in chronic progressive cases of epidemic encephalitis, were evidently inclined to the opinion that this disturbance may be an important factor in the development of the chronic stage of the disease. They cite, for purposes of comparison, Wilson's disease, the cerebral changes in acute yellow atrophy and Fuchs' experiments with Eck's fistula.

Buscanio [8] in 1924 and in 1926 expressed the opinion that aromatic amines absorbed through lesions in the hepatic and intestinal barriers and acting on the central nervous system played an important part in the production of the chronic stage of the disease. Bolsi [9]

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* Read before the Section on Nervous and Mental Diseases at the Seventy-Ninth Annual Session of the American Medical Association, Minneapolis, June 15, 1928.

1. Cruchet, Moutier and Calmette: Bull. et mém. Soc. méd. d. hôp. de Paris **41:** 614, 1927.
2. Martin: Bull. de l'Inst. Pasteur **16:** 513, 1918.
3. Sainton: Bull. et mém. Soc. méd. d. hôp. de Paris **42:** 543, 1918.
4. Yates, A. P., and Barnes, S.: J. Laryng. & Otol. **40:** 646, 1925; Lancet **2:** 130 (July) 1925.
5. Salzman, S. R.: M. J. & Record **120:** 14 (July) 1924; Is Encephalitis an Infectious, Epidemic Disease? Arch. Neurol. & Psychiat. **14:** 638 (Nov.) 1925.
6. Fuchs: Wien. med. Wchnschr. **71:** 709, 1921.
7. Meyer-Bisch, R., and Stern, F.: Ztschr. f. klin. med. **96:** 328 (Feb.) 1923.
8. Buscanio: Gior. di clin. med. **5:** 2, 1924; Riv. di patol. nerv. **31:** 116, 1926.
9. Bolsi: Riv. di. patol. nerv. **30:** 193, 1925.

agreed with Buscanio's theory, but Audo-Gianotti [10] and others believe that the liver lesion is secondary to the lesions in the vegetative nervous system.

Other workers, including Mercio [11] and O'Flynn and Critchely,[12] did not find any evidence of liver disturbance in epidemic encephalitis.

Silberstein, working with Hoff and Orel,[13] corroborated Fuchs' experiments in developing encephalitis in dogs after the production of Eck's fistula. They concluded, however, that the encephalitis was caused by a virus, probably rabies, in the nasopharynx of the dog, which was harmless until the metabolic disturbance injured the protective mechanism of the central nervous system.

The case for the toxic origin of epidemic encephalitis does not seem to rest on a very firm foundation. Many points of evidence, in regard to liver lesions, for example, are not corroborated by other workers or are differently interpreted by them. Moreover, the manner in which the disease spread in increasing numbers from place to place and has since subsided strongly suggests that it is of an epidemic nature. In its epidemiologic manifestations it bears a strong resemblance to poliomyelitis and to meningococcus meningitis. Therefore, if one assumes that it is of a toxic nature, one is forced to hypothesize some infectious disease that was prevalent in different parts of the world for some years, to the effects of which epidemic encephalitis was due.

2. CULTIVABLE BACTERIA

Von Wiesner [14] in 1917 reported that he had found in the brain in fatal cases of epidemic encephalitis a diplostreptococcus which he believed was the etiologic agent. Similar organisms were described by many other investigators. Van Boeckel, Bessemans and Nelis [15] found the same organism in the brains of normal rabbits, especially if the material was not entirely fresh, and concluded that it was a secondary invader. This opinion is now generally held. Many other different organisms were found from time to time by smear or culture in the central nervous system, cerebrospinal fluid or blood in cases of encephalitis. These are too numerous and relatively unimportant to mention.

Bradford, Bashford and Wilson [16] in 1919, Loewe and Strauss [17] in 1919 and 1920, and Thalhimer [18] in 1921 reported the successful cultivation, in some form of Noguchi tissue medium, of rather similar minute organisms from the brain, spinal fluid or nasopharyngeal secretions of patients. These organisms were all filter-passing. Loewe and Strauss and Thalhimer did a large amount of animal experimentation and reported success in inoculating about 50 per cent of rabbits. Flexner [19] and also McCartney [20] tried to repeat the work of Loewe and Strauss without success. It is pointed out that about the same percentage of rabbits as those in which so-called positive results were obtained suffer from spontaneous lesions of the central nervous system. McCartney believed that the clouding of the mediums was caused by a precipitation in the mediums due to a change in the hydrogen ion concentration. The clouding and also the so-called globoid bodies were found in the control tubes as well as in those inoculated. These objections apply equally well to the work of Thalhimer and to that of Bradford, Bashford and Wilson. Also it may be stated that Thalhimer's filtrable virus was examined by Levaditi [21] and pronounced to be *Encephalitozoon cuniculi*.

Bastai [22] in 1920 and 1921 isolated a filter-passing culture, pathogenic for cats and rabbits, which he described as containing two organisms. One was a strict anaerobe and the other was susceptible of cultivation aerobically as well. This culture was examined by Levaditi [21] and found to be very like *Pasteurella*.

Rosenow [23] in numerous articles has described a streptococcus with a special affinity for the central nervous system, isolated from various foci of infection, such as teeth and tonsils, as well as from the central nervous system in fatal cases. It is quite pleomorphic and may at times be filter-passing. He reported similar organisms in poliomyelitis, epidemic hiccup, spasmodic torticollis and chorea. It is well known that many competent bacteriologists disagree with Rosenow's conclusion.

Evans and Freeman,[24] in 1926 and 1927, described a highly pleomorphic streptococcus, in one phase appearing as a spore-bearing rod producing not only spores but also minute filtrable coccoid bodies. This organism was isolated from the brain in a fatal case of epidemic eencephalitis, from the spinal fluid in chronic cases and from the blood and spinal fluid in acute cases. Evans also reported finding a similar organism in six strains of virus, five from cases of herpes and one from a case of epidemic encephalitis, sent her for experimentation. They believe that their organism is the same as that described by von Wiesner and Rosenow.

In the light of present knowledge, it is a little difficult to discuss an organism showing such pleomorphism and such powers of mutation as that just described. It seems fair to suspend discussion until further investigations have been published.

It may be pertinent, however, to point out that the pathologic changes in epidemic encephalitis do not suggest an inflammation due to bacterial action. I can do no better than to quote from the Mellon Lecture delivered by Zinsser, May 10, 1928, in Pittsburgh:

> It may be justly held, therefore, that the pathology of the brain in encephalitis, significant as it occasionally is, is not inconsistent with the presence of an invading agent, and—more than this—that it is indeed consistent with the assumption of the presence of a virus arousing the same general type of reaction as those of poliomyelitis or rabies. It is distinctly inconsistent, however, with the assumption of a bacterial process, and should have much weight in prejudicing us

10. Audo-Gianotti: Minerva Med. **6:** 41, 1926.
11. Mercio: Schweiz. med. Wchnschr. **4:** 709, 1923.
12. O'Flynn and Critchely: Lancet **2:** 1329, 1925.
13. Silberstein, Hoff and Orel: Wien. klin. Wchnschr. **37:** 30, 1924; Ztschr. f. d. ges. exper. Med. **44:** 257, 268, 280, 285, 1924-1925.
14. Von Wiesner: Wien. klin. Wchnschr. **30:** 933, 1917.
15. Van Boeckel, Bessemans and Nelis: L'encephalite lethargique, Brussels, 1923, p. 330.
16. Bradford, J. A.; Bashford, E. F., and Wilson, J. A.: Brit. M. J. **1:** 599, 601, 602 (May 17) 1919.
17. Loewe, Leo; and Strauss, Israel: Diagnosis of Epidemic Encephalitis: Value of Nasopharyngeal Washings and of Cerebrospinal Fluids, J. A. M. A. **74:** 1373 (May 15) 1920; Proc. New York Path. Soc. **20:** 18, 1920; J. Infect. Dis. **27:** 250 (Sept.) 1920; M. Rec. **98:** 705, 1920.
18. Thalhimer, William: Epidemic (Lethargic) Encephalitis: Cultural and Experimental Studies, Arch. Neurol. & Psychiat. **5:** 113 (Feb.) 1921.
19. Flexner, Simon: Epidemic (Lethargic) Encephalitis and Allied Conditions, J. A. M. A. **81:** 1688 (Nov. 17), 1785 (Nov. 24) 1923.
20. McCartney, J. E.: J. State Med. **34:** 709 (Dec.) 1926.
21. Levaditi, C.: Paris méd. **1:** 97 (Jan. 31) 1925; **1:** 573 (June 27) 1925.
22. Bastai: Gazz. d. osp. **41:** 663, 1920; Boll. Inst. sieroterap. Milanese **2:** 197, 1921.
23. Rosenow, E. C.: Etiology of Encephalitis, J. A. M. A. **79:** 443 (Aug. 5) 1922; Specificity of Streptococci in Etiology of Diseases of Nervous System, ibid. **82:** 449 (Feb. 9) 1924; J. Infect. Dis. **32:** 41, 72 (Jan.) 1923. Rosenow, E. C., and Jackson, G. H., Jr.: Ibid. **32:** 144 (Feb.) 1923. Rosenow, E. C.: Ibid. **33:** 531 (Dec.) 1923; **34:** 329 (April) 1924; Journal-Lancet **44:** 479 (Oct.) 1924; Experiments on Etiology of Respiratory Arrhythmias Following Epidemic Encephalitis, Arch. Neurol. & Psychiat. **11:** 155 (Feb.) 1924; Further Studies on Etiology of Epidemic Hiccup and Its Relation to Encephalitis, ibid. **15:** 712 (June) 1926; Localization in Animals of Streptococci from Cases of Epidemic Hiccup, Encephalitis, Spasmodic Torticollis and Chorea, ibid. **19:** 424 (March) 1928.
24. Evans, Alice C., and Freeman, Walter: Pub. Health Rep. **41:** 1095 (June) 1926. Evans, Alice C.: Ibid. **42:** 171 (Jan.) 1927. Freeman, Walter: Chronic Epidemic Encephalitis, J. A. M. A. **87:** 1601 (Nov. 13) 1926; Encephalitis with Tumor of Brain, Arch. Neurol. & Psychiat. **18:** 433 (Sept.) 1927.

against the ready acceptance of a bacterial etiology of any of the various forms of cocci which have been described both for encephalitis and for poliomyelitis.

3. A FILTRABLE VIRUS

McIntosh and Turnbull [25] in 1919 succeeded in producing the clinical and pathologic picture of epidemic encephalitis in a patas monkey by the intracerebral and intraperitoneal inoculation of the filtered brain emulsion from a fatal case. This virus was carried on in a short series.[26] Later, McIntosh [27] reported successful inoculations of rabbits with brain emulsion in three instances, and with cerebrospinal fluid in one instance. One of these strains of virus was carried on in series. Not enough data in regard to any of these strains are available to permit their being placed with those strains either identical with or closely allied to the herpes virus, of which I shall speak later. It may be well before going on to discuss these to refer briefly to various strains that have been quite definitely disproved as having any etiologic relationship with epidemic encephalitis. Since 1921, Kling and his co-workers [28] have reported numerous successful transfers to rabbits of material from the nasopharynx and intestine, as well as from the central nervous system. Levaditi [21] states that he has proved these viruses to be spontaneous encephalitis. However, Doerr and Zdansky [29] isolated a herpes strain from a brain sent them by Kling. Koritschoner,[30] in 1923 and 1925, reported the isolation of a virus from two fatal cases, diagnosed as encephalitis or myelo-encephalitis, in which the patients had previously been bitten by rabid dogs. This virus was pathogenic for dogs. Doerr and Zdansky,[29] Levaditi [21] and Schweinburg [31] consider this virus to be a strain of rabies. The virus of Kobayashi,[32] isolated in the Japanese epidemic in 1924, has been proved by Cowdry [33] to be a strain of rabies.

Takaki,[34] working first in Japan and later in Vienna with Bonis, Koref [35] reported a virus also isolated in the Japanese epidemic in 1924, which he asserted was different from the herpetic-like strains described by Levaditi and others. Reports from other workers to confirm or to disprove this statement are lacking at present.

The following strains of virus, closely allied to or identical with herpes virus, have been isolated from the brain or spinal fluid in cases of epidemic encephalitis:

1. Levaditi and Harvier, two strains in 1920 and 1921, one from the brain,[36] and one from the nasopharynx.[37] The strain from the brain, "C," is still being studied.

2. Netter, Césari and Durand,[38] a strain, in 1921, from the brain; carried on for a short series with characteristic symptoms in rabbits. This was not submitted to as thorough a study as the other strains but was included as a probable successful isolation of the virus.

3. Doerr and Schnabel,[39] 1921: "Bâle I," from the cerebrospinal fluid.

4. Doerr and Berger,[40] 1922: "Bâle II," from the brain.

5. Berger,[41] 1922: "Bâle III," from the brain.

6. Schnabel,[42] 1923: "Berlin," from the cerebrospinal fluid.

7. Luger and Lauda,[43] 1923: "Wien," from the cerebrospinal fluid.

8. Doerr and Zdansky,[29] 1923: "Hogander," from a brain sent them by Kling.

9. Perdrau,[44] 1925: A virus, E. L. 1, obtained by a special technic from the brain; also two other viruses from the brain and six viruses from nasal washings. Not all these viruses were studied in great detail, apparently. However, Perdrau reported these as capable of giving rise to a keratitis in the rabbit and as apparently identical with herpes. Of course, nasal washings are particularly liable to harbor a herpes virus that may not have had any relation to the encephalitis. In 1927 he apparently laid claim to the successful isolation of only two strains of virus.

Herpes-Like Viruses Isolated from Material from Cases of Epidemic Encephalitis

Investigator	Date	Name of Virus	Material Used
Levaditi and Harvier	1920	C	Brain
Levaditi and Harvier	1920(?)	Ch	Nasopharynx
Netter, Césari and Durand	1921	.....	Brain
Doerr and Schnabel	1921	Bâle I	Cerebrospinal fluid
Doerr and Berger	1922	Bâle II	Brain
Berger	1922	Bâle III	Brain
Schnabel	1923	Berlin	Cerebrospinal fluid
Luger and Lauda	1923	Wien	Cerebrospinal fluid
Doerr and Zdansky	1923	Hogander	Brain sent by Kling
Perdrau	1925	E. L. 1	Brain
Perdrau	1925	.....	Brain

By the most liberal reckoning, then, only eleven strains of herpes-like viruses were isolated from cases of epidemic encephalitis. A more critical analysis might well eliminate the nasopharyngeal strain of Levaditi and Harvier, and that of Netter, Césari and Durand.

How can this small number of positive results be reconciled with the large number of failures?

Perdrau [45] has elaborated the theory, suggested earlier by Levaditi,[46] that there is a production of an antibody, with a neutralizing effect on the virus, in the brain of infected individuals. This antibody falls off in glycerin more quickly than does the virus, leaving an increasingly larger amount of unbalanced virus. Levaditi found the passage virus more active after being kept a few days in glycerin; Perdrau found that the virus from the human brain increased after remaining five or six weeks in glycerin, and Berger [41] had negative results with the inoculation of an emulsion of fresh brain, but after the same brain was kept for fourteen days in glycerin the result was positive. Perdrau points out that, if this theory is correct, the amount of unbalanced virus in the brain will vary greatly. It is easy, therefore, to see how many negative results may be obtained, especially

25. McIntosh, J. A., and Turnbull, H. M.: Brit. J. Exper. Path. **1**: 89 (April) 1920.
26. McIntosh, J. A., and Turnbull, H. M.: Brit. J. Exper. Path. **1**: 257, 1920.
27. McIntosh, J. A.: Brit. J. Exper. Path. **4**: 34 (Feb.) 1923.
28. Kling, C.: Compt. rend. Soc. de biol. **84**: 815; **85**: 823, 1182, 1921; **87**: 75, 77, 79, 486, 771, 1179, 1922; **90**: 507, 511, 514, 1924; Hygiea **83**: 566, 1921; **84**: 894 (Nov.) 1922; Wien. Arch. f. inn. Med. **6**: 101, 1923.
29. Doerr, R., and Zdansky, E.: Schweiz. med. Wchnschr. **53**: 349 (April) 1923; Ztschr. f. Hyg. u. Infectionskr. **102**: 1, 1924.
30. Koritschoner: Wien. klin. Wchnschr. **36**: 385, 1923; Virchows Arch. f. path. Anat. **225**: 172, 1925.
31. Schweinburg: Ztschr. f. Immunitätsforsch. u. exper. Therap. **42**: 552, 1925.
32. Kobayashi, R.: Japan M. World **5**: 145 (June) 1925.
33. Cowdry, E. V.: J. Exper. Med. **45**: 799 (May) 1927.
34. Takaki, I.: Japan M. World **5**: 145 (June) 1925; Ztschr. f. Immunitätsforsch. u. exper. Therap. **47**: 441, 1926.
35. Bonis, A., and Koref, O.: Ztschr. f. Immunitätsforsch. u. exper. Therap. **47**: 431, 456, 1926.
36. Levaditi, C., and Harvier, P.: Compt. rend. Soc. de biol. **83**: 354, 1920.
37. Levaditi, C., and Harvier, P.: Compt. rend. Soc. de biol. **85**: 195, 1921.
38. Netter, A.; Césari, and Durand, H.: Compt. rend. Soc. de biol. **84**: 854, 1921.
39. Doerr, R., and Schnabel, A.: Ztschr. f. Hyg. u. Infectionskr. **94**: 29, 1921.
40. Doerr, R., and Berger, W.: Schweiz. med. Wchnschr. **52**: 862 (Aug. 31) 1922.
41. Berger, W.: Wien. klin. Wchnschr. **35**: 801 (Oct. 12) 1922.
42. Schnabel, A.: Wien. klin. Wchnschr. **36**: 84 (Feb. 1) 1923.
43. Luger, A., and Lauda, E.: Ztschr. f. d. ges. exper. Med. **39**: 1, 1924.
44. Perdrau, J. R.: Brit. J. Exper. Path. **6**: 123 (June) 1925.
45. Perdrau (footnote 44); Brit. J. Dermat. **39**: 1 (Jan.) 1927.
46. Levaditi, C.: Ectodermoses neurotropes poliomyélitie encéphalitie herpès, Paris, Masson & Cie, 1922, p. 168.

since the duration of the disease, before the case comes to autopsy, is so variable. In poliomyelitis, for example, the patients die in the early stages of the disease, before such a reaction would be likely to take place, if one may reason by analogy that this reaction, if it really exists, occurs also in poliomyelitis. Perdrau also points out that another reason for failure may be the difficulty encountered in infecting one species of animals with a strain adapted to another species. This is true in passing from one species to another of animals such as the guinea-pig and the rabbit, which are much more closely related than are the rabbit and man. These two lines of reasoning account to some extent for the small number of positive results.

A rather strong argument against the theory of the herpes-like virus being the cause of epidemic encephalitis is the fact that it is sometimes found in the spinal fluid of patients who are not suffering from the disease. A herpes virus was isolated by Flexner and Amoss [47] from the spinal fluid in a case of cerebrospinal syphilis. Bastai and Busacca [48] demonstrated the presence of herpes virus in the spinal fluid or blood of twenty-one patients with herpes in about 86 per cent.

On the other hand, Schnabel,[49] working with the spinal fluid of forty-three patients with a herpetic eruption, and Doerr and Zdansky,[50] using six brains, three from patients with herpes, failed to demonstrate the presence of the herpes virus. These contradictory observations, therefore, leave the question open as to whether this herpes-like virus is the etiologic factor in epidemic encephalitis or a chance invader.

A certain amount of human experimentation has been done with this virus. Bastai and Busacca [48] inoculated Schnabel's strain "Berlin" in the skin of three persons (with only cutaneous reaction), in the eye socket of a fourth, and in the subarachnoid space of a fifth, without any reactions in the central nervous system in any case. Schnabel [51] inoculated himself with the encephalitis virus after its passage through the brains of rabbits. It produced fatal encephalitis in the rabbits, but only herpetic vesicles in the author. Of course, these negative results in human beings prove comparatively little. Many persons must have a relatively high natural immunity to the disease.

The immense amount of experimental work done with these different viruses isolated from cases of epidemic encephalitis, and with strains of herpes virus, leaves little doubt that they are very closely allied, if not identical. The herpes virus is certainly not new. We have been familiar with it in a most innocuous rôle. We feel sure that, for many years prior to the recent outbreak, cases of the disease now known as epidemic encephalitis occurred rarely, if at all. It is a little difficult for many of us to picture the herpes virus suddenly developing such malignancy, and then quite as suddenly losing it, for certainly cases of acute epidemic encephalitis are now exceedingly rare. It would seem reasonable to assume that, if this virus played any part in the etiology of epidemic encephalitis, some other factor, as yet unknown, must also have been at work. We are therefore forced to the conclusion that up to the present time the etiologic agent of epidemic encephalitis has not been proved.

45 Gramercy Park.

47. Flexner, Simon; and Amoss, H. L.: J. Exper. Med. **41**: 215 (Feb.) 1925.
48. Bastai, P., and Busacca, A.: Schweiz. Arch. f. Neurol. u. Psychiat. **15**: 176, 1924; **16**: 56, 1925; München. med. Wchnschr. **71**: 1056 (Aug. 1) 1924.
49. Schnabel, A.: Klin. Wchnschr. **3**: 1015 (June 3) 1924.
50. Doerr and Zdansky (footnote 29, second reference).
51. Schnabel, A.: Klin. Wchnschr. **2**: 429 (March 5) 1923.

MILK SICKNESS, THE RESULT OF RICHWEED POISONING*

JAMES FITTON COUCH, PH.D.
WASHINGTON, D. C.

Recent toxicological and chemical investigations [1] of richweed poisoning, supported by a large number of clinical reports of cases of milk sickness, make it possible to state definitely certain facts about this disease. It can no longer be doubted that milk sickness is richweed poisoning and that it is caused by the consumption of milk or milk products obtained from cows that have fed on that plant.[2]

Richweed, or white snakeroot, known botanically as *Eupatorium urticaefolium* Reich., is one of the composite family. It occurs throughout the eastern United States as far west as Oklahoma and Nebraska. A chemical study of the toxic constituents of this plant has revealed the fact that three poisonous substances are present. Two of these, a volatile oil and a resin acid, do not produce "trembles" in animals and have no relationship to milk sickness. The third poison is an oily liquid, with the characters of a secondary alcohol, named tremetol. This substance produces characteristic trembles in animals and is responsible for milk sickness.

Tremetol is an aromatic, optically active, straw yellow oil of the composition $C_{16}H_{22}O_3$. It is not very stable and cannot be distilled without decomposition, even in high vacuum. It is toxic to experimental animals whether given by mouth or parenterally.

Tremetol gives a color reaction with concentrated sulphuric acid, which may be used to detect the free substance even in very small amounts. The suspected material is shaken with purified petroleum benzin and the solution is floated on the surface of 2 or 3 cc. of concentrated sulphuric acid in a dry test tube. If tremetol is present, the interface or surface between the two liquids is colored red. When the two liquids are mixed by shaking the tube, the petroleum benzin solution becomes a transient red while the acid layer acquires a cherry red more or less intense according to the amount of tremetol present. This color should develop as soon as the solutions are mixed. If only minute amounts of tremetol are present, a yellow or orange color may be the result. The color test has been applied to as many species of *Eupatorium* as could be obtained, only recently gathered and undried specimens being used. No species other than richweed responded to the test. At times the test may fail when applied to richweed. This appears to be due to the fact that tremetol exists in richweed in ester combination, at least in part, with a resinous nontoxic acid. The compound is insoluble in petroleum benzin and unless some of the tremetol is in a free state the color reaction will not be obtained. Failure to obtain the test from specimens of the plant does not indicate that the material is harmless. All richweed is to be suspected.

Fresh plants contain the most tremetol. When the plant is dried the poisonous alcohol rapidly disappears, and completely dried plants, while still dangerous to animals on account of the presence of toxic resin acid,

* From the Bureau of Animal Industry, U. S. Department of Agriculture.
1. Couch, J. F.: The Toxic Constituent of Richweed or White Snakeroot (Eupatorium urticaefolium), J. Agric. Research **35**: 547-576, 1927.
2. A similar condition, observed in the Southwest, which is clinically identical with Eastern milk sickness, is due to poisoning from rayless goldenrod (Aplopappus heterophyllus). This disease will not be discussed here, although much of the information presented in this paper applies equally to rayless goldenrod poisoning.

are incapable of producing trembles in animals or milk sickness in man. Outbreaks of milk sickness are most common in the late summer and early autumn when the growth of richweed is luxuriant, although sporadic cases have appeared in late spring, and milk sickness from poisonous butter has occurred during the winter when richweed has been killed by cold weather.

The plant appears to be unpalatable to animals and they usually do not eat it unless forced by hunger and lack of more acceptable forage. During the spring and summer there is usually an abundance of pasture grasses, and the herds do not consume richweed in quantities. Later in the season, especially if hot, dry weather has retarded the growth of grasses or if the pastures have been overgrazed, herbivorous animals will feed on this plant. Trembles will develop in the herds and the cows will secrete poisonous milk.

Richweed or white snakeroot (Eupatorium urticaefolium), the plant that causes milk sickness and trembles.

The secretion of poisonous milk is frequently very insidious. It is not uncommon for the cow to exhibit no abnormal symptoms. Often the first notice to the family that anything is amiss is the illness of one of its members, who suddenly is stricken with milk sickness.

This fact is strikingly shown in two series of cases reported by Wilkinson[3] of Greenville, S. C. In the first set, which included three cases, the cow did not show any evidence of trembles until two days after the onset of the third case. In the second set, also of three cases, the patients developed milk sickness three weeks, fifteen days, and one day, respectively, before the cow became noticeably sick.

A similar case occurred among those described by Hansen.[4] In this instance three members of a family were poisoned, one fatally. The milk supply was obtained from cows that were grazing in a pasture where there was an abundance of richweed which had clearly been eaten off. None of the cows died, but a young bull in the herd developed trembles and died shortly after the death of the patient.

There is no reasonable doubt that cows feeding on richweed do secrete milk capable of causing trembles. Several cases are on record in which, under experimental control, richweed was fed to lactating animals, and the suckling young that took the milk developed characteristic trembles and died.

The character of the poison that is present in such milk is, however, unknown. Whether it consists of unaltered tremetol or some metabolized product of that substance cannot be stated. From what is known of the chemical nature of tremetol it does not seem probable that it would resist the chemical processes of the body but rather that it would be oxidized to some derivative. It is, of course, quite possible that such an alteration of the tremetol molecule could take place without seriously altering its poisonous properties.

Isolation of the poisonous substance in toxic milk and butter is necessary to complete the chain of evidence connecting milk sickness with richweed. Such milk and butter are very difficult to procure for experimental purposes, because the outbreaks of disease occur at some distances from laboratories and under circumstances which make it impracticable to obtain large samples either of milk or of butter. Any physician who may have an opportunity to obtain such milk or butter is requested to ship it to this laboratory (express collect) for analysis.[5]

I have mentioned milk and milk products as the means of conveying richweed poisoning to man. Is it not possible that meat from poisoned animals may transmit the poisoning as well? On this point there is little agreement. Most of the early accounts contain statements that dogs and cats fed on the carcasses of animals which had trembles developed the disease and died. Some of the cases of milk sickness were attributed to meat from poisoned animals. Careful laboratory experiments, however, have uniformly failed to confirm these statements. I fed two cats on the muscle tissue and a third cat on the heart, liver, kidneys and spleen obtained from a sheep that had died of trembles, without producing abnormal symptoms in the cats. It does not seem probable that tremetol will accumulate in the tissues in quantities sufficient to poison other animals that may feed on the carcasses and, indeed, if that poison is distributed through the tissues of the original animal and if the toxic dose for all animals is about the same, a second animal would be forced to eat at least half its body weight of meat from the carcass before obtaining a lethal dose.

Certainly, danger of poisoning from the meat of animals that have fed on richweed would occur only with lower animals that habitually eat raw meat. The

3. Wilkinson, G. R.: Milksickness, South. M. J. **18**: 797 (Nov.) 1925.
4. Hansen, A. A.: Relation of White Snakeroot to Human Milk Sickness, J. Indiana M. A. **20**: 182 (May) 1927.

5. Address the chief, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.

processes of cooking to which man subjects his meat would destroy in great part, if not wholly, any tremetol that might have been deposited in it. When all these things are taken into consideration there appears to be little danger that richweed poisoning may be conveyed to man through the medium of meat, especially if it is well cooked.

One of the peculiarities of richweed that has caused much uncertainty, confusion and controversy is the apparent variation in the toxicity of specimens from different localities. In some districts where there is an abundance of the plant milk sickness is unknown, while there are other places that seem to be especially deadly and in which fatal cases originate nearly every year. Such "plague spots" have caused many farms to be abandoned, and, in the pioneer days, were sufficient to induce the settlers to desert the neighborhood and move to some more healthful locality. The lack of definite knowledge concerning the poisonous principle of richweed has hitherto prevented a quantitative study of this variation. However, a few figures are available that illustrate the difference in the tremetol content of plants from different sections of the country.

Samples of richweed collected at Beecher City, Ill., in September, 1925, and samples of leaves of richweed collected at Lafayette, Ind., in September, 1927, yielded 0.15 per cent and 0.13 per cent of tremetol, respectively. Samples of leaves and of blossoms collected at Woodmont, Va., in September, 1926, yielded little more than traces of the substance. Milk sickness and trembles have been observed at the localities in Beecher City and Lafayette from which the samples were obtained. At Woodmont, however, which lies along the south bank of the Potomac River across from the District of Columbia, milk sickness and trembles have not been observed as far as the records show, although the plant grows very luxuriantly there. Feedings of plants from that locality to sheep have been without effect, as was the case also with extracts made from Woodmont richweed. It appears, therefore, that richweed is not dangerous in that locality. It is possible that there are many other such localities in the United States and that the comparative harmlessness of the local richweed may have given rise to some of the negative reports that are found in the literature.

Milk sickness has generally been a rural disease. Outbreaks have occurred principally on isolated farms and in small towns through the Middle West. Few cases have been reported from cities. This situation has undoubtedly arisen because it is on the farm that one gets milk from a single or, at best, from a few cows. If these cows have access to richweed the contaminated milk will be consumed day after day by the same persons and cumulative poisoning will occur. Even after the illness has commenced, it is likely that the patient will continue to drink the comtaminated milk unless the disease is promptly recognized as milk sickness and the etiology known.

In urban communities, however, a different situation exists. There the milk supply is obtained from many sources and whatever milk from cows with trembles may find its way into the milk depots is mixed with other milk and so diluted that it is harmless. There has been some question whether the heat involved in pasteurization might not be sufficient to detoxicate tremetol. This does not appear to be likely. While it is sensitive to heat, tremetol is only slowly destroyed at the temperature of boiling water and probably is very slightly affected by the temperature of pasteurization. This would not account, then, for the absence of milk sickness in the cities. It has often been suggested that if a case of the disease did occur in one of the larger communities it would probably not be diagnosed as such but would more likely be considered food poisoning, acute gastritis, or some obscure digestive disorder.

In view of these facts, it is of the highest importance to recognize the relationship between poisoned milk and milk sickness and to insure a supply of wholesome milk to patients with that disease.

One of the first cares of physicians in districts in which milk sickness has occurred should be to detect the sources of the poisoned milk and to prevent the products from being used as food. Examination of pastures in which the cows graze will determine whether richweed is present. Areas where richweed is abundant should be fenced off or the plant should be eradicated. The latter task is not difficult, for the root system of richweed is shallow and may easily be pulled up, especially in the moist, woodland soil where the plant thrives. After the plants have been pulled up they should be burned, and the pastures should be inspected once a year to catch the seedlings and the plants overlooked in the first eradication. In this way a farm may be freed from richweed and the danger of milk sickness completely removed.

TULAREMIA

REPORT OF A FULMINATING CASE WITH NECROPSY *

H. D. PALMER, M.D.
AND
G. H. HANSMANN, M.D.
IOWA CITY

Francis and Callender [1] were able to obtain and study histologically material from only ten of the 323 cases of tularemia reported prior to 1927. During the first nine months of 1927 we have reviewed twenty-five additional case reports but have not found any further reference to the pathologic histology. The tissue in three of the ten cases studied by Francis and Callender was obtained at necropsy; study of the other seven cases was limited to the surgical material. *Bacterium tularense* was demonstrated in three of the ten cases. The clinical observations together with the agglutination test were assumed specific enough to brand the remaining seven cases as tularemia. The time elapsing between the onset of illness and the time the material for histologic study was taken ranged from eighteen to ninety-nine days in the cases examined at necropsy and from twelve to 240 days in those examined at biopsy.

A patient with tularemia died at the University Hospital eight days after the onset of illness. The fulminating nature of the case, the early and rapidly progressing lesions, and the generalized fatty degeneration of endothelial cells and various other tissue elements were considered of sufficient interest to justify this report.

REPORT OF CASE

History.—A. R. C., a healthy, white American woman, incised the dorsum of the third and fourth fingers of her left hand while dressing a rabbit, Nov. 9, 1926. Three days

* From the Department of Pathology and Bacteriology, State University of Iowa College of Medicine.

1. Francis, Edward; and Callender, G. R.: Tularemia, Arch. Path. 3: 577 (April) 1927.

later the injured fingers were swollen, hot and tender. November 12, she developed an irregular fever and tenderness in the left axilla. Both the fever and the tenderness persisted. Forced by extreme weakness and prostration, she became bedfast on November 15. Nausea and vomiting were distressing symptoms following the onset of the disease, and an aggravating cough disturbed her for four days. November 15, a sudden and almost complete deafness was noted. After November 16, there was moderate abdominal distention and diarrhea (nine stools daily). Despite an amenorrhea she lost small amounts of blood from the vagina during the several days preceding her entrance into the hospital, November 19.

Physical Examination.—The patient was muttering, stuporous, deaf, toxemic and well nourished. The lips and tongue were dry and extremely red. The temperature, pulse and respiration were 105, 140 and 45, respectively. She resisted passive movements of the neck. The third and fourth fingers of the left hand were swollen and red, the swelling being most marked in the region of the distal interphalangeal joints. The dorsum of these fingers showed rapidly progressing ulcers with necrotic margins. There was no gross lymphangitis but there was a tender mass in the left axilla which measured

Fig. 1.—Fatty metamorphosis of smooth muscle in vessels of the brain.

3 cm. in diameter. The vulva and vagina were red and dry. The uterus in the normal position was small and hard. Red blood corpuscles numbered 4,000,000; leukocytes, 9,000. Of these, 64 per cent were polymorphonuclears, 20 per cent large lymphocytes, and 19 per cent small lymphocytes. A blood culture in dextrose meat infusion broth was negative. Agglutination tests for *Bacterium tularense* were negative at the local hygienic laboratory and at the laboratory of the United States Public Health Service, as well as at our own. The urine was not examined. The patient died, November 20, thirty-six hours after her admission to the hospital.

Necropsy.—A thick crust covered the wound at the distal joint of the middle finger. When the crust was removed, serosanguineous fluid escaped. A mass that measured 3 by 2 cm. was felt in the left axilla, but a discrete gland could not be made out. Lymphangitis could not be demonstrated between the injury of the hand and the mass in the left axilla. The mass removed from the left axilla was incised, and much softened material, more puriform than caseous, escaped. The largest lymph node measured 3 by 1.5 cm. and contained grayish necrotic areas. Lymph nodes of the mediastinum and right axilla also showed necrosis. These glands were less than a centimeter in diameter. The glands of the groin and mesentery were palpable. They were not sectioned. The serous cavities did not contain any excess fluid. Both lower lobes of the lungs showed a mottled gray appearance on a congested background. The spleen was firm and weighed 270 Gm. Evident beneath the capsule and scattered throughout the substance of the spleen were numerous opaque yellowish white areas of necrosis. The largest measured 2 mm. in diameter and the sum of the lesions occupied three fifths of the spleen. The

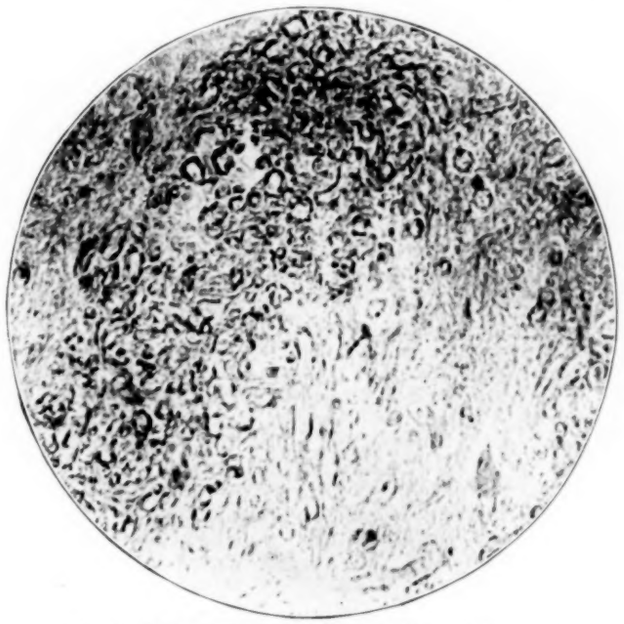

Fig. 2.—Myelin degeneration in nerve fibers of the pons.

liver showed marked fatty metamorphosis. Necrosis was not noted. The gallbladder did not contain stones but had a "strawberry" appearance. The suprarenals and pancreas were normal. The right kidney weighed 170 Gm.; the left, 150 Gm. There were a few puckered scars. The kidneys were a uniform yellowish white. The brain was markedly congested.

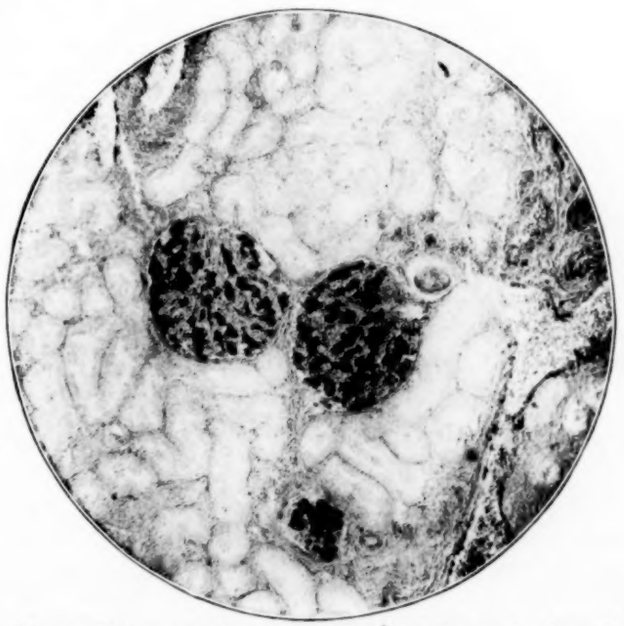

Fig. 3.—Fatty metamorphosis of vascular endothelium in the glomerular tufts.

Microscopic Changes.—There were areas of intense congestion in the lung. The vessels were markedly distended with blood, and a great deal of extravasated blood was found in the alveolar walls and within the alveoli. The alveoli about the markedly congested areas contained a granular precipitate. Here and there were several alveoli and an occasional bron-

chiole filled with purulent exudate. Free in the alveolar walls and plugging some of the smaller vessels were large foamy mononuclear cells. Much of the vacuolated appearance of these cells was shown by Marchi's method to be due to fat. Migration of these mononuclear cells through the vessel walls was quite frequently seen.

Immediately beneath the capsule, the liver parenchyma was compressed. Beneath this was a zone of intense congestion. Throughout the sections were minute areas of necrosis, varying in size from the involvement of a few liver cells to areas 1 mm. in diameter. The lesion was composed of necrotic liver cells, polymorphonuclear leukocytes, mononuclear cells and a considerable amount of fibrin. One passed, without an intervening wall, from the necrotic area into a zone in which vacuolated endothelial cells filled the sinusoids between the liver cords. Small faintly staining bodies (Giemsa's method) which had the size and arrangement of *Bacterium tularense* were found both within and without endothelial cells. Fatty metamorphosis of the liver cells was prominent in all sections.

The spleen showed intense congestion. Areas of necrosis were found which were larger and more numerous than those in the liver. Some lesions were confluent, giving a stellate effect. Little normal splenic tissue remained. In and about the lesions mononuclear cells were found ingesting both the lymphocytes and the red blood corpuscles. The lesions did not differ strikingly in structure from those found in the liver. The vacuolated endothelial cells about the lesions and the great amount of fibrin within the lesions were again prominent features. In addition, there was a fatty change in the endothelium of the larger vessels.

Lesions, identical in size and structure with those found in the spleen, were present in the lymph nodes. Phagocytosis of red corpuscles and lymphoid cells by the large mononuclear leukocytes was a very prominent feature. Two endothelial cells contained small, pale, punctate bodies which had the morphology and staining reaction of *Bacterium tularense*. No giant cells were seen. The suprarenal cells were shrunken and there were several areas of hemorrhage. The endothelium and epithelium of the kidney was diffusely injured. This was

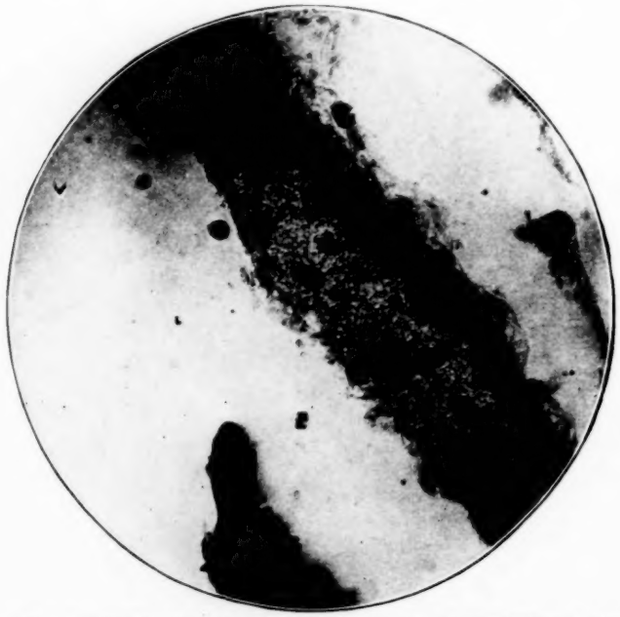

Fig. 4.—Proliferation and fatty metamorphosis of endothelium lining the pia arachnoid.

evidenced by the accumulation of fat both within the cells of the tubules and within the endothelial cells lining the capillary vessels. The glomerular capillaries showed the most marked endothelial injury. All capillaries contained large, foamy, mononuclear cells which stained intensely by Marchi's method. In the stroma between the tubules were capillaries filled with similar cells. Fat in the renal epithelium was most abundant in the cells of Henle's loop. The convoluted tubules contained quite frequent globules, while the collecting tubules contained only an occasional droplet of fat. The stroma between the tubules was edematous. There were no areas of necrosis. The brain showed congestion. A minute pontile hemorrhage was found. Fatty endothelial cells several layers deep formed small elevations on the pia arachnoid. The neurons, glia cells and muscle cells of the vessels all contained an excess of fat.

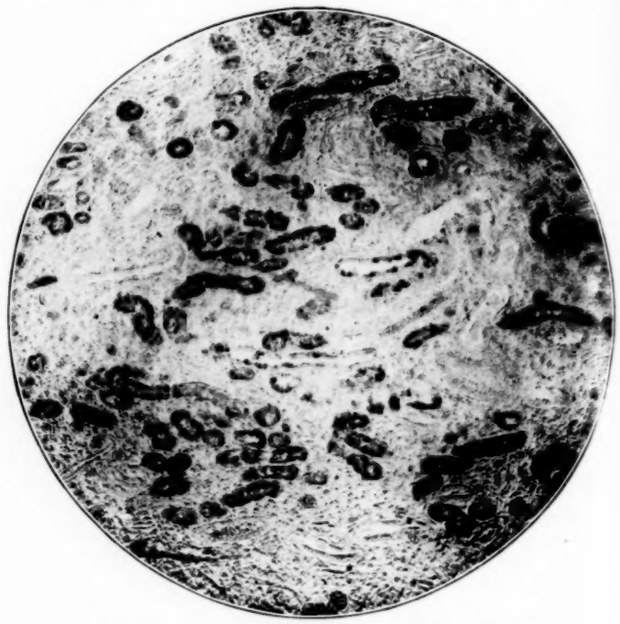

Fig. 5.—Fatty metamorphosis of renal tubule epithelium.

A diffuse degeneration of myelin was noted in the fiber tracts of the pons and in the fibers of the eighth nerve.

Bacteriologic Study.—Five guinea-pigs were inoculated at the time of the postmortem, two with heart's blood and three with pus from the axillary lymph nodes. All the pigs died on the fourth or fifth day. Many minute white areas of necrosis were found in the spleen and liver of each pig. Heart's blood and emulsified spleen of these animals caused death in four days' time, with identical lesions, in rabbits and other guinea-pigs. Inoculation with material from animals which successively died was carried through a large number of guinea-pigs with uniformly fatal results and identical pathologic changes. An organism was recovered from the guinea-pigs, first from the heart's blood and later from the spleen, which was agglutinated by specific serum for *Bacterium tularense* in a dilution of 1:640. This culture caused the death of a guinea-pig in four days with typical lesions of tularemia. It has maintained its virulence unattenuated for fourteen months on an artificial culture medium.

COMMENT

The only complicating feature in this case was an inconsiderable amount of bronchopneumonia which did not give any clinical symptoms. This was not considered to have any appreciable effect on either the length of life of the patient or the acuteness of the lesions other than those in the lung.

The localization of the organisms with the production of lesions was limited to the finger, axillary lymph nodes, spleen and liver. Individual lesions showed the central area of necrosis with fibrin deposit and the peripheral endothelial cell reaction described in the lesions of case 10, which represents the earliest lesion studied by Francis and Callender. Our case differs, however, in that no giant cells were found; there was no appreciable thickening of the blood vessel walls about the lesion, and there was marked fatty degeneration of the endothelial cells.

Cell changes, other than those participating in the formation of discrete lesions, suggested the presence of a strong toxin. All tissues were involved in an acute degeneration of the parenchymatous and endothelial elements. Attention is directed particularly to the fat found in the endothelium of the glomerular tufts, in the renal epithelium, in the muscle cells of the vessels and in the cellular elements of the central nervous system. There was also an acute degeneration of the myelin in the central nervous system. This was the only cause that could be found to account for the sudden and complete deafness.

134 New Medical Laboratory.

RESULTS OF ACCUMULATIONS OF BILE AROUND THE LIVER

CLINICAL AND EXPERIMENTAL OBSERVATIONS *

WALTMAN WALTERS, M.D.
AND
JESSE L. BOLLMAN, M.D.
ROCHESTER, MINN.

The accumulation of bile around the liver and diaphragm, following operation on the biliary tract, may produce sufficient reaction to prolong convalescence, and, if the amount of bile is large, death may occur. Such an accumulation may occasionally follow cholecystectomy from an aberrant hepatic duct lying in the bed of the liver and opened by cholecystectomy, but rarely from the end of a securely ligated cystic duct. The complication is, of course, more usual in cases in which the common bile duct has been drained, or in which anastomosis has been made between the intestine and some portion of the biliary tract, distended as a result of common duct stricture or from tumors in the

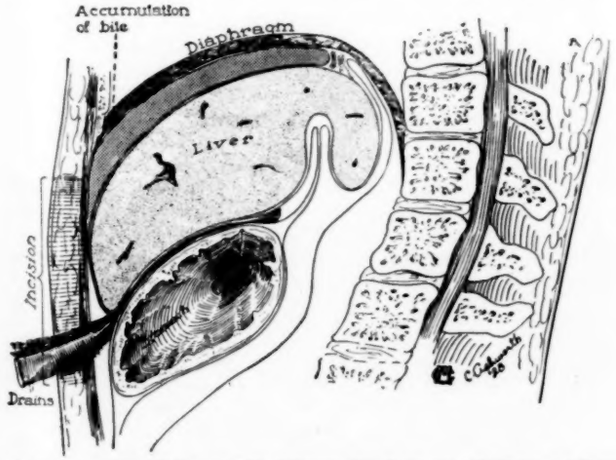

Fig. 1.—Accumulation of bile between the liver and diaphragm following choledochoduodenostomy.

head of the pancreas compressing and obstructing the common bile duct. In the latter group, although the operative site is invariably drained, if the accumulation of bile is too great or the drainage tract too small to permit prompt exit of the bile, perihepatic and intra-abdominal accumulation may occur.

Choledochoduodenostomy was performed recently by one of us (Walters) in the presence of extreme jaundice resulting from stricture at the lower end of the common bile duct. The stump of the duct was accurately anastomosed to an opening made in the duodenum. The area was drained with a double strip of gauze and a Penrose drain. In spite of this, several hundred cubic centimeters of bile accumulated between the liver and the diaphragm, in a period of twelve hours.

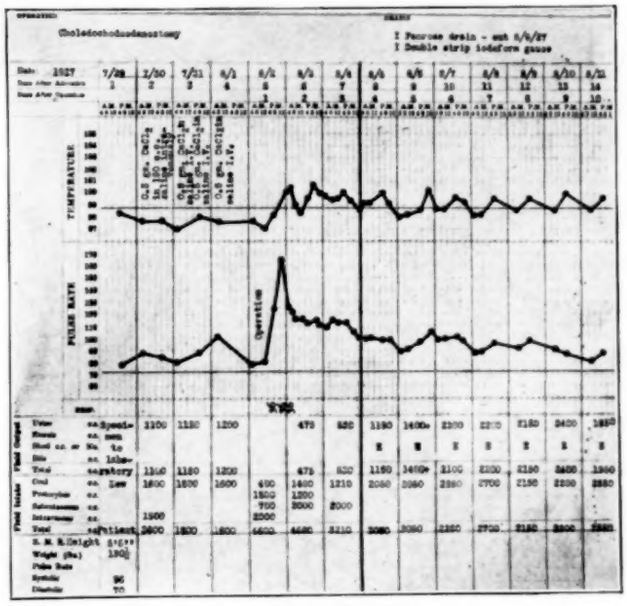

Fig. 2.—Hospital chart.

A syndrome characterized by an exceedingly rapid pulse rate of low pressure, a rapid rate of respiration, a cold damp skin and semiconsciousness resulted from downward displacement of the liver and interference with the circulation of the inferior vena cava (fig. 1). With the patient in such condition, the abdominal incision was opened to permit the exit of from 500 to 600 cc. of bile from the area between the dome of the liver and the diaphragm; immediate improvement occurred followed by an otherwise uncomplicated convalescence and complete recovery (fig. 2). Experimentally, we were able to show that downward displacement of the liver produced disturbances of the circulation in the inferior vena cava, resulting in changes in blood pressure, in pulse rate, and in respiratory rate similar to those that occured in the patient. Furthermore, the removal of factors displacing the liver was followed both clinically and experimentally by the return to normal of the pulse rate, blood pressure and respiratory rate, and of other objective symptoms. In view of this it has seemed to us that the factors concerned were worthy of investigation.

EFFECT OF DISPLACEMENT OF THE LIVER

Experimental displacement of the liver was brought about in a manner which seemed comparable to that occurring clinically. A rubber glove on a catheter was arranged so that air pressure could be admitted to the glove and the pressure recorded on a mercury manometer. A dog under ether anesthesia was prepared for direct recording of the carotid blood pressure and for recording of the respiratory rate. The rubber glove was then inserted into the peritoneal cavity above the liver, care being taken to see that inflation of the glove would cause downward displacement of the liver. The abdomen was then tightly closed with clamps and air

* From the Division of Surgery and the Division of Experimental Surgery and Pathology, the Mayo Foundation.

pressure of 2 cm. of mercury admitted to the glove (fig. 3). The blood pressure immediately began to fall and remained low until the pressure was released. With the fall of blood pressure there was an increase in the pulse rate and in the rate of respiration (fig. 4 *a*, *b* and *c*). It was found that by progressively increasing

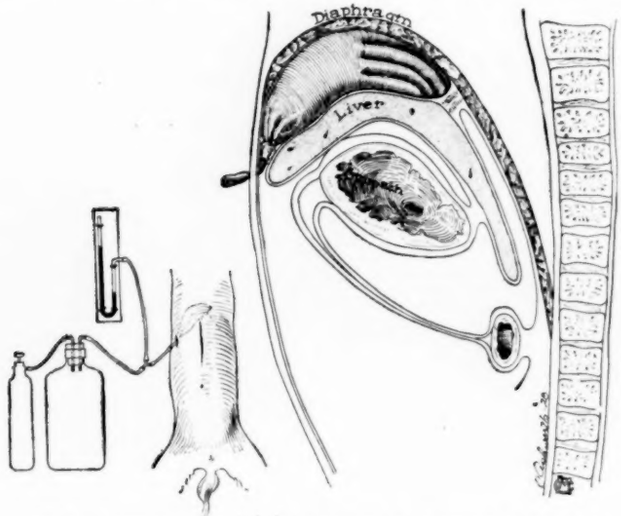

Fig. 3.—Experimental method of downward displacement of the liver.

the pressure above the liver a progressive decrease in the blood pressure could be produced. It was not possible to maintain more than 6 cm. of mercury pressure above the liver longer than a few minutes, since the animal failed rapidly under this procedure. These effects were clearly due to downward displacement of the liver, since only slight changes were produced when even greater pressures were applied to the glove placed below the liver. The release of the pressure from above the liver was followed by immediate return to normal of the blood pressure, pulse and respiration. This occurred even after the pressure had been maintained, so that the blood pressure was reduced to a minimum and cardiac failure was evidenced by the extreme irregularity of the heart.

It would seem that these striking changes due to downward displacement of the liver might be due to the mechanical effect of reducing the lumen of the inferior vena cava above the liver with the resultant diminution of the blood available for the heart. Experimentally it was found that partial occlusion of the vena cava above the liver caused irregular decrease in the blood pressure. If the vena cava was completely occluded with a soft rubber clamp above the liver, the blood pressure immediately fell to a low level. If the clamp was removed the blood pressure immediately returned to its normal level (fig. 5). The pulse rate and the respiratory rate were markedly increased by occlusion of the vena cava above the liver.

LYMPHATIC ABSORPTION AROUND THE LIVER

The factor of absorption around the liver must be taken into account, although the rapidity with which the reactions occurred clinically as well as experimentally led us to believe that it probably plays a minor part.

From Poynter's [1] work it might readily be inferred that lymphatic absorption from the peritoneal cavity occurs wholly through the lymphatics of the diaphragm. Absorption of the constituents of bile in the peritoneal cavity by the portal system will probably not play the major part in producing toxic symptoms as the liver is in a position to detoxify any such absorbed material. Since we were concerned with the rate of absorption of bile from the peritoneal cavity, particularly that in contact with the diaphragm and liver, we investigated the subject by studying the rate of appearance of bile pigment in the lymph of the thoracic duct (fig. 6). When bile was placed in contact with the diaphragm, the lymph of the thoracic duct became bile-stained within two or three minutes after instillation. When bile was placed in the peritoneal cavity below the liver, the lymph of the thoracic duct did not become bile-stained for a period of from twenty to thirty minutes and it was found that some bile had come in contact with the surface of the diaphragm. When this surface was carefully packed off with oiled silk, it was noted that bile did not appear in the lymph of the thoracic duct even after two hours.

In the same study we were interested in the absorption of bile by the lymphatics of the capsule of the liver; it was noted that bile in contact with the capsule but not in contact with the diaphragm did not appear in the lymph of the thoracic duct. It is apparent that absorption from the under surface of the diaphragm is particularly rapid but it is hardly conceivable that such absorption is a major factor in producing the severe, rapidly developing symptoms that are noted clinically. This is well brought out by studies on the toxicity of bile in the peritoneal cavity from the clinical and experimental standpoint by Wangensteen.[2]

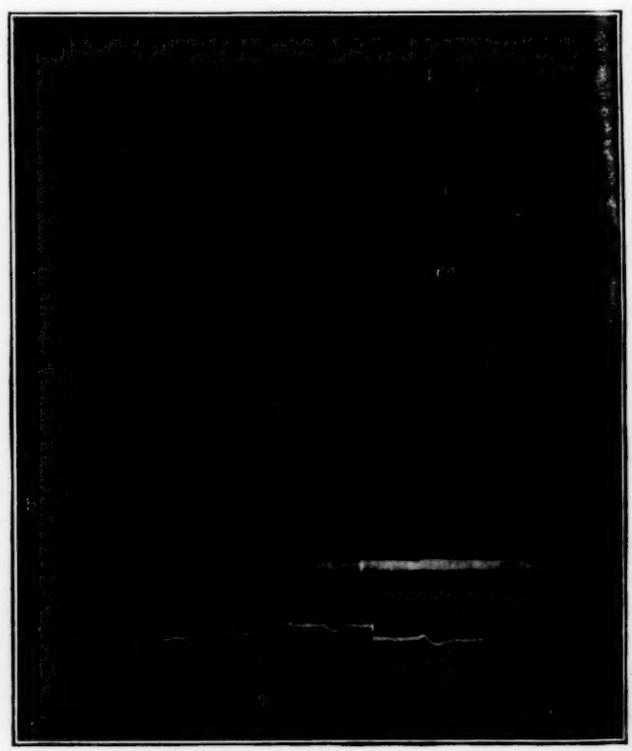

Fig. 4.—Changes in blood pressure and respiration in experimental displacement of the liver: *a*, the fall in blood pressure and increase in respiration due to downward displacement of the liver; *b*, the progressive decrease of blood pressure due to increasing pressure between the liver and diaphragm; *c*, the return of blood pressure and respiratory rate to normal with the release of pressure from above the liver.

1. Poynter, C. W. M.: Peritoneal Absorption, Proceedings of the Staff Meetings of the Mayo Clinic **2**: 263-264, 1927.

2. Wangensteen, O. H.: On the Significance of the Escape of Sterile Bile into the Peritoneal Cavity, Ann. Surg. **84**: 691-702 (Nov.) 1926.

CHOLEDOCHODUODENOSTOMY FOR STRICTURE OF THE COMMON BILE DUCT

As previously mentioned, identical changes occurred in blood pressure, pulse and respirations in the experiments on dogs and in a case in which from 500 to 700 cc. of bile accumulated between the liver and diaphragm following choledochoduodenostomy for stricture of the lower end of the common duct. In this case choledochoduodenostomy (fig. 1) was performed

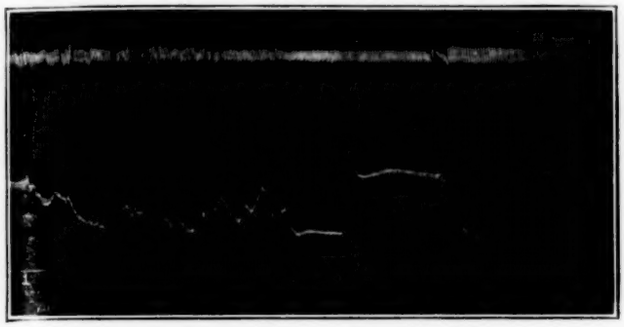

Fig. 5.—Changes in blood pressure and respiration due to experimental occlusion and release of inferior vena cava. The irregular decreases of blood pressure were produced by partial occlusion of the vena cava above the liver. The marked decreases were produced by complete occlusions. Immediate return to normal with the release of the occluding clamp is shown.

at 10 a. m., Aug. 2, 1927. An accurate anastomosis was made between the stump of the common bile duct above the stricture, which was dilated to about three times its normal caliber, and an opening made in the duodenum—three rows of chromic catgut being used in the anastomosis. In the dissection of the stump of the common duct from its adhesions to the surrounding structures, a small nick which was thought at the time to be of no consequence was made into the lumen of the duct near the hilum of the liver, which probably was the point of exit of bile leakage. Because of the large size of the common bile duct above the stricture, exact anastomosis was possible.

During the succeeding eight hours the patient's general condition was quite satisfactory. At 7 p. m. a member of the resident staff was called to see the patient, who appeared to be in shock; the pulse was rapid, 150 a minute and of poor quality; the skin was cold and clammy, and respirations were 35 a minute (fig. 3). Intravenous injection of 700 cc. of sodium chloride solution was given immediately, in anticipation of the arrival of a blood donor. Five hundred cubic centimeters of citrated blood was given. The patient's condition improved for two hours, when again the pulse and respiratory rates began to increase and at 1 a. m. her general condition was about the same as it had been at 7 p. m.; the pulse rate was 170 a minute, respirations were 38, and the blood pressure was faint. Again 500 cc. of blood was given intravenously, with only partial improvement in the condition. At 2 a. m. the wound was opened in the patient's room under local anesthesia. When the opening in the peritoneum was enlarged, from 500 to 700 cc. of bile gushed out from above the liver. Immediate improvement followed; there was a drop in pulse rate from 165 to 120 in a short time, and from semiconsciousness the patient improved so rapidly that she described the improvement as immediate. With the decrease in the pulse rate there was a corresponding increase in its volume.

August 3, at 8 a. m., six hours after the drainage of the bile from above the liver, the patient's condition was very satisfactory; the pulse rate was 115 and the respiratory rate was normal. Convalescence from this time on was uneventful. The drains inserted at the primary operation and the tubes inserted when the abdomen was reopened were removed on the seventh day after operation. The patient was dismissed from the hospital, August 25, at which time the wound was practically healed; there was no bile draining from it; the stools were of normal color and contained a normal amount of bile. She was kept under observation for a short time and was allowed to return home, September 26; the wound was healed and the general condition was excellent. The jaundice had practically subsided. The preoperative serum bilirubin was 6.3, and two days before dismissal it was 2.2. In a recent letter (Jan. 21, 1928) she stated that she was in excellent condition, and that since returning home she had gained in weight, her skin was perfectly clear and the stools were normal in color. There had not been further symptoms of biliary obstruction, pain, chills, fever or jaundice. From the standpoint of the causation of the stricture it is of interest to include that the patient had had two operations on the biliary passages elsewhere for cholelithiasis: in 1907, cholecystostomy and in 1925, cholecystectomy. She came to the clinic, July 25, 1927, stating that following removal of the gallbladder in June, 1925, there had been free drainage of bile from the wound for about six weeks. The bowels were loose, from six to ten soft stools a day containing pus, blood and mucus; the color was lighter than normal. A month later, a jaundice tinge of the skin was noticed. In February, 1926, two attacks of mild epigastric pain had occurred with nausea and vomiting followed by residual soreness. The attacks lasted about an hour and were followed by a slight increase in the jaundice. In April the jaundice cleared and the stools became normal. In

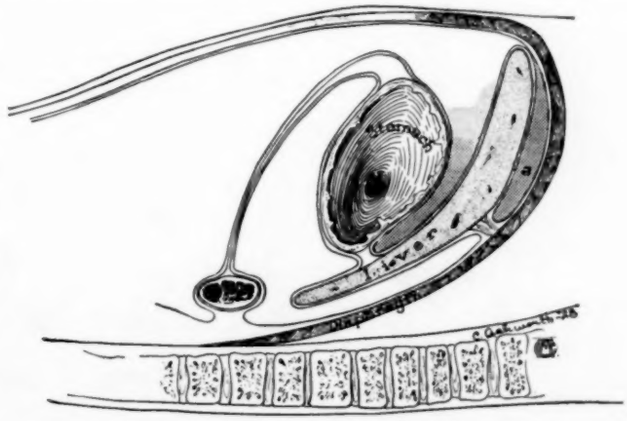

Fig. 6.—Relation of rate of lymphatic absorption of bile formation around diaphragm and liver: *a*, bile pigment appeared in lymph of thoracic duct in two minutes; *b*, bile pigment appeared in lymph of thoracic duct in twenty-five minutes.

September, a varied degree of jaundice appeared and the stools were light, these conditions continuing until the time of examination.

The patient had lost 23 pounds (10.4 Kg.). Jaundice of the skin and mucous membranes was graded 2. The liver was enlarged and smooth but not tender. The enlargement was more noticeable on the right side than on the left. The urine contained bile, graded 1. The hemoglobin was 50 per cent; the erythrocytes numbered 3,130,000 and the leukocytes, 5,400. The Wassermann reaction was negative. The serum bilirubin was 6.3, direct van den Bergh reaction. The

coagulation time was six minutes. A diagnosis was made of incomplete obstruction of the common duct and operation was advised. The patient was 44 years of age.

SUMMARY

The postoperative accumulation of bile around the liver, producing its displacement, is sufficient to cause symptoms of shock and even death if allowed to persist. From our experiments we believe the reaction to be due to interference with the circulation in the inferior vena cava from the downward displacement of the liver. Removal of the forces producing the displacement is followed, both clinically and experimentally, by the immediate return of normal circulation and the disappearance of symptoms. Bile accumulating around the liver is rapidly absorbed by the lymphatics of the diaphragm, and experimentally is detected in the lymph of a thoracic duct fistula in from two to three minutes after its contact with the peritoneal surface of the diaphragm. This is in contrast to the relatively slow appearance of bile in fluid from such thoracic duct fistulas when there is bile below the liver.

AN EVALUATION OF LIVER EXTRACT IN THE TREATMENT OF THE ANEMIAS OF SPRUE

PRELIMINARY NOTE

BAILEY K. ASHFORD, M.D., Sc.D.
Professor of Tropical Medicine and Mycology of Columbia University, at the School of Tropical Medicine of the University of Porto Rico
SAN JUAN, PORTO RICO

In January, 1928, I received from Eli Lilly and Company, on request of Dr. George Minot, with whom I had been in correspondence, enough liver extract to test out the effect of this fraction in four cases of anemia of "pernicious" type occurring in the course of tropical sprue. Shortly afterward, this product was placed on the market in San Juan and I was thus enabled to investigate, in all, twenty-four cases, as follows:

Twenty of typical sprue, fourteen with a pernicious anemia, and six with a secondary type of anemia.

Four not sprue, to act as a check on the medullary types of anemia ("medullary" being used with reference to the bone marrow). These four cases were all secondary anemias, three being little more than hemoglobinemias.

Of the twenty patients with sprue, fourteen were placed on my own sprue diet, and received from three to six vials of Lilly and Company's liver extract number 343 daily, in addition. Four were treated alone by this diet, one received the diet and *Monilia psilosis* vaccines, and one received these vaccines without liver extract or dietary restriction.

The diet referred to is abundant in animal proteins, fresh vegetables and fruits, is extremely limited in fats, and is free from sugar of commerce and cereals.

The vaccine consisted of a 1 per cent suspension of killed cultures. Weekly inoculations were given, beginning with 0.1 cc. and increasing by 0.1 cc. on each subsequent occasion until a dose of 1 cc. was reached.

In addition to these cases, which were observed daily or every other day, and blood data taken before, during and after a course of liver extract, there were forty-three more cases, representing eighty counts of reticulocytes made at least once with hemoglobin and erythrocyte estimations. Twenty-three of these patients were not suffering from anemia and yielded an average reticulocyte percentage of 0.18, which is probably not far from the normal for the healthy population of San Juan.

In preparing slides for the vital staining of reticulocytes, a drop of a 0.3 per cent alcoholic solution of cresyl blue was placed at one end and allowed to dry. The drop of blood taken up on the end of another slide was worked back and forth a few times until it became uniformly blackish, and then was spread in the usual way. These slides were thereafter stained by Wright's method, and a thousand erythrocytes classified by means of a mechanical stage and a ruled disk let into the eyepiece of the microscope.

Of the fourteen patients with sprue treated by liver extract, ten were suffering from an anemia of primary or pernicious type.

Five of these responded with a reticulocyte shower on receiving liver extract. In these five cases, the average percentage of erythrocytes to the normal, and the average hemoglobin, when treatment with this product was begun, was 23.2 and 35.8, respectively; after nine weeks of its continuance, these values rose to 71.8 and 93 per cent, respectively. The average reticulocyte curve rose to its peak, 162 per thousand erythrocytes, and embraced a period of about twelve days. The rise began from one to six days after liver extract was first administered. To three of these patients, liver had been given for a variable period immediately preceding the administration of the extract, and in one of the patients two transfusions of blood had been absolutely without effect in raising the blood values.

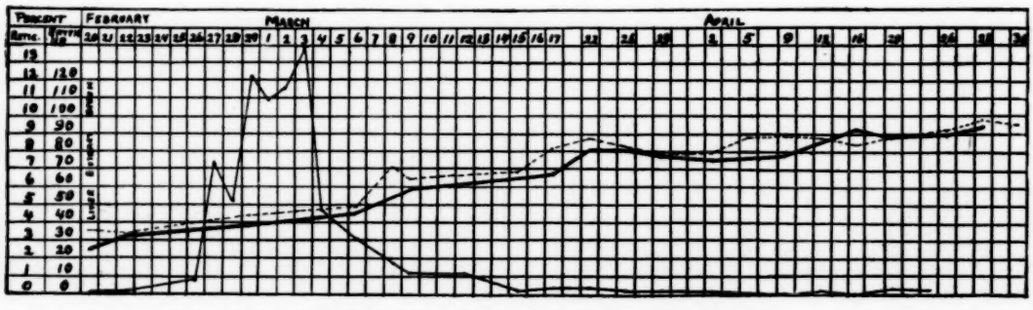

Chart 1.—Hemoglobin, erythrocytes and reticulocytes in case 2.

Of the five remaining patients with a pernicious type of anemia who received liver extract, the average percentage of erythrocytes to normal and the average hemoglobin before beginning treatment was 59 and 66.8, respectively. After forty days these values reached 70 and 81 per cent, respectively. No reticulocyte shower was observed during the administration of liver extract, but one patient had already received six inoculations of *Monilia psilosis* vaccines, one had received four transfusions of blood, six inoculations

of these vaccines, and a half pound of liver a day and had risen from 18 per cent of erythrocytes and 20 per cent hemoglobin to 78 per cent erythrocytes and 60 per cent hemoglobin by the time liver extract became available. Indeed, the other three patients had been eating liver in a desultory sort of way for some time previous to the administration of the extract in their case.

Of the four patients of sprue with secondary anemia, none showed the slightest increase of reticulocytes under liver extract.

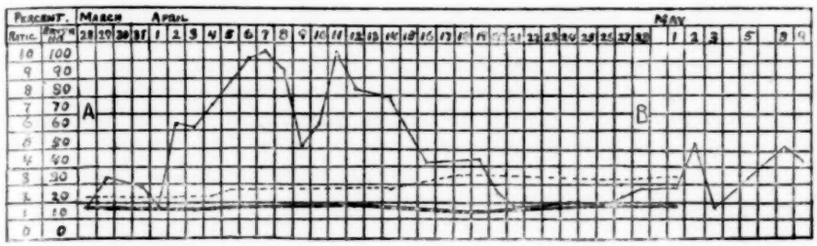

Chart 2.—Hemoglobin, erythrocytes and reticulocytes in case 16: *A*, diet begun; *B*, Monilia psilosis vaccine administered.

There remain for consideration six patients with sprue anemia not given liver extract:

Of the four patients treated by diet alone, one had a mild secondary anemia, two had a remission type of pernicious anemia with red cell counts of more than 2,000,000, while only one, a young woman, was suffering from a pernicious anemia crisis with 25 per cent hemoglobin, 824,000 erythrocytes, and 1.8 reticulocytes. Without any liver whatever, liver extract, or any other agency than my own sprue diet, responsible in large measure for the cure of many similar cases throughout a period of fifteen years past, her reticulocyte percentage started to rise on the fifth day and reached 104 per thousand erythrocytes on the eleventh day. The reticulocyte curve regressed to its base line, 1.8 per cent, after twenty-one days. As yet there has been no time for any considerable rise in blood values but the patient is decidedly improved.

The last two patients with sprue, of this series of twenty patients, were treated, one with diet and vaccines, the other with vaccines alone. In the first of these two cases the type of anemia was secondary and no rise in reticulocytes was seen or expected. In the other case, a fairly severe one with a distinctly pernicious type of anemia, the patient presented before her first inoculation 32 per cent erythrocytes, 44 per cent hemoglobin and 0.5 per cent reticulocytes. Throughout her course of ten inoculations there was developed a perfectly distinct series of little peaks, which may or may not be ascribed to the inoculation of a foreign protein. Of course, I do not pretend that there is any specificity in this curious phenomenon. The patient is distinctly better and, save for her attacks of sore tongue, increase in intestinal gas, and diarrhea following each inoculation, she has generally been free from symptoms. Her present hemoglobin percentage after two months is 60; her erythrocyte count, 1,776,000. This patient had never been treated with a sprue diet or given liver in any form. She has been encouraged to eat everything.

The four patients used as controls, all of secondary anemia, received liver extract throughout an average of twenty-two days and showed no rise in reticulocytes at any time.

THE CHARTS

In the accompanying charts the broken line is the curve of the hemoglobin, the heavy line that of the erythrocytes. All hemoglobin readings were made with the Dare instrument. The erythrocyte count is expressed as the percentage of a normal count arbitrarily fixed at 5 million per cubic millimeter for both sexes. The third line, lighter than the erythrocyte line, gives the curve of the reticulocytes. The number of these in thousands of erythrocytes was determined on each occasion and expressed in percentages. For the period covered by expected changes in the percentage of reticulocytes, these were counted daily, save in case 14, in which the patient was not accessible except every other day.

Case 2 was one of anemia of pernicious type in sprue. The patient was treated with a sprue diet plus liver extract, from three to six vials a day. The patient was apparently normal in one month after beginning treatment in spite of his age, 60 years.

Patient 16 was a young woman, almost moribund from sprue and the pernicious type of anemia it had produced. She was treated only by my sprue diet and had no liver or liver extract. Despite the rise in the reticulocytes the blood values did not materially improve, although clinically she is much better, so ten days after the reticulocyte percentage had subsided, one injection of 0.1 cc. of *Monilia psilosis* vaccine was administered with the same result as seen in the following case, a series of feeble peaks with precipitous fall to the base line.

Patient 14 was a young woman in much the same state as patient 16. She was quite too poor to buy the sprue diet and I placed her on the vaccine only, without dietary restrictions and, of course, without liver. In her case there is marked clinical improvement without betterment in the hematologic state. Her case has already been referred to.

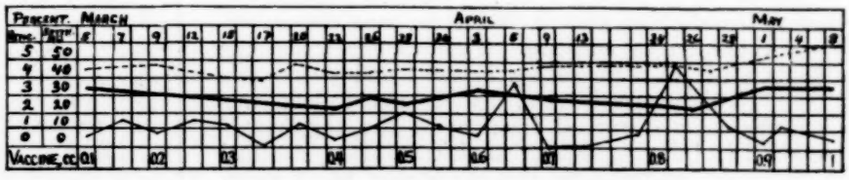

Chart 3.—Hemoglobin, erythrocytes and reticulocytes in case 14

Case 19 is a complete case of sprue with secondary anemia unaffected by liver extract and is included here for contrast.

These cases are merely illustrative of the group of twenty-four here summarized.

TENTATIVE CONCLUSIONS

1. Anemias of sprue with a high color index and less than 2,000,000 erythrocytes are pretty sure to yield a shower of reticulocytes when Minot's liver fraction is administered unless the bone marrow is hypoplastic.

2. An erythrocyte percentage of more than 60, despite a high color index in the anemias of sprue, has

so far not given an appreciable increase in reticulocytes on the administration of this fraction.

3. In a case of dysplastic anemia due to sprue, with a blood picture indistinguishable from pernicious anemia and an icteric index of 9, the sprue diet of the author apparently produced a reticulocyte shower comparable to that resulting from the administration of liver extract, save that the curve was sustained over a longer time and was more gradual in its ascent and descent.

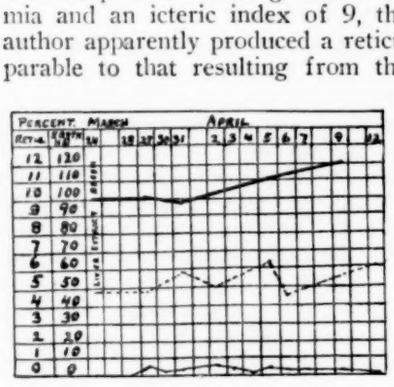

Chart 4.—Hemoglobin, erythrocytes and reticulocytes in case 19.

4. The sudden eruption of reticulocytes, produced by the administration of liver extract in appropriate cases, acts as an internal transfusion, as it were, and within a couple of weeks thereafter is usually followed by a pronounced rise in erythrocytes and hemoglobin.

5. While the case seems to go to a clinical cure and the blood values run high, the type of pernicious anemia remains, as evidenced by the persistent high color index and size of the erythrocytes, for at least two months after the administration of liver extract.

6. So far (sixteen cases), no patient with secondary anemia has given the slightest medullary response to liver extract.[1]

FLUCTUATION IN THE HYDROGEN ION CONCENTRATION OF SALIVA IN EPILEPSY*

A. M. SAUNDERS, M.D.
CHICAGO

Epilepsy had for a long time been considered a condition of acidosis of the system. The nonmedicinal treatment consisted of restricting meats and of replacing them with vegetables to reduce the acidity.

Bisgaard and Norvig were the first to demonstrate that rather the opposite, an alkalosis, was the underlying condition in epilepsy. They demonstrated the retention of basic substances in the blood serum and urine. This dysregulation, as it was called, was attributed to a disturbed function of the parathyroid gland. I had an opportunity to visit St. Hans Hospital in Denmark at the time this work was being done. Norvig at that time was treating his patients with parathyroid gland, which was extracted with physiologic sodium chloride solution and was injected into the patient immediately. He explained that the commercial parathyroid extracts were unsatisfactory on account of the marked instability of the active principle. He succeeded in cutting down the frequency of epileptic seizures and in reducing the irritability of the patients. I have not heard of his work recently, but many other authors have since substantiated the presence of an alkalosis in epilepsy. As is known, the diet now given to epileptic persons has been changed to a ketogenic diet consisting of high fat and protein ratios to produce an acidosis. The results have been very encouraging, especially in children. Marrack and Gilbert, in their investigations of the blood serums of epileptic patients, were unable to demonstrate definite changes in the reaction. Observations in this line of work have been quite contradictory, and it occurred to me that an investigation of the reaction of some of the body secretions that could be more easily obtained at frequent intervals and without discomfort to the patient might be of interest. The latter factor is an important criterion in working with state hospital patients. The determination of the hydrogen ion concentration of the saliva was one of the easiest tests to make. The La Motte colorimetric method, which is very sensitive, was used, and all precautions were taken to avoid errors.

Patients were selected who had epileptic seizures only rarely as, for instance, one a month, and other patients who were subject to frequent seizures, about one or more a day. The patients were given a light breakfast in the morning, after which they cleaned their teeth carefully, using a tooth brush and plain water. This was done under the supervision of a trained nurse. They were also instructed to gargle and to rinse the mouth repeatedly with plain water. They were then kept in the examining room under close observation. They did not receive any food nor did they put anything else into their mouths during the five or six hours of examination. The reaction of the saliva was tested every fifteen minutes. The nurse had the patient expectorate into a receptacle to remove any saliva that might have accumulated and been held in

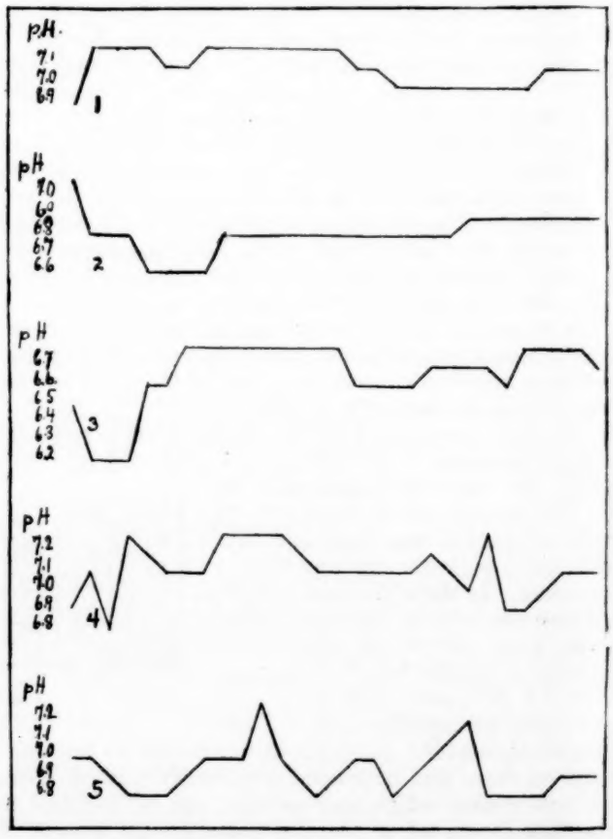

Fig. 1.—Tracings 1 and 2, from normal persons; 3, 4 and 5 from epileptic patients with infrequent convulsions.

1. A detailed account of the cases involved in this note, with hematologic graphs, a discussion of the terminology of the anemias of sprue, and a note on the leukocyte count and morphology and size of erythrocytes with Price-Jones curves in each case by my assistant, Miss L. M. Dalmau, who has assisted me in the labor of securing the data presented in this paper, is in course of preparation.

* From the Illinois State Psychopathic Institute.
* Read before the Chicago Pathological Society, May 14, 1928.

the mouth by the patient. Then a second small container was given the patient which had been cleaned and rinsed repeatedly in distilled water. The patients were instructed to draw the saliva up from underneath the tongue. The specimens thus obtained were immediately tested and the results recorded. The La Motte method requires only a few minutes. This was considered an important factor, because it cut down the possibility of a change in the reaction as a result of bacterial activity.

The results obtained were surprising: patients with frequent convulsions and also those few who had seizures while under direct observation showed a marked fluctuation in the reaction. Other patients who had not had convulsions for the last few days or for several days following showed very slight or no fluctuation, giving a curve like that of the normal controls. The fluctuation in the reaction seemed to have a definite relationship to the convulsive period.

The accompanying charts will illustrate these conditions. Specimens were examined every fifteen minutes, the experiment taking for each patient from five to seven hours.

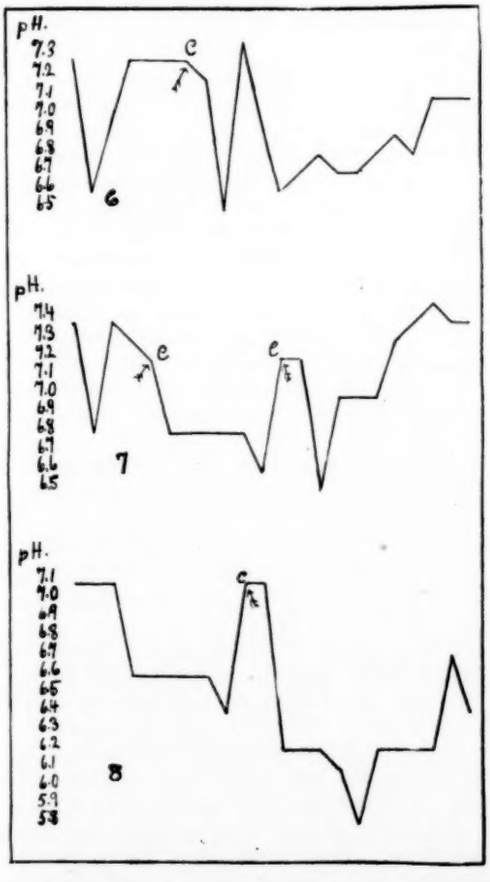

Fig. 2.—Tracings 6, 7 and 8, from patients subject to frequent and severe convulsions; *c*, convulsions.

Tracings 1 and 2 were taken from normal persons. The variation of the reaction did not amount to more than five points. The changes were gradual.

Tracings 3, 4 and 5 were from epileptic patients with infrequent convulsions. The fluctuations in reactions were more abrupt and frequent.

Tracings 6, 7 and 8 were from patients who are subject to frequent and severe convulsions, who also had one or two seizures during the experiment. In case 8 there is a range of hydrogen ion concentration from 7.1 to 5.8. In all three cases a change to increased acidity is noticeable after each convulsion.

Tracings 9 and 10 were from patients who had epileptic convulsions shortly before the experiment and

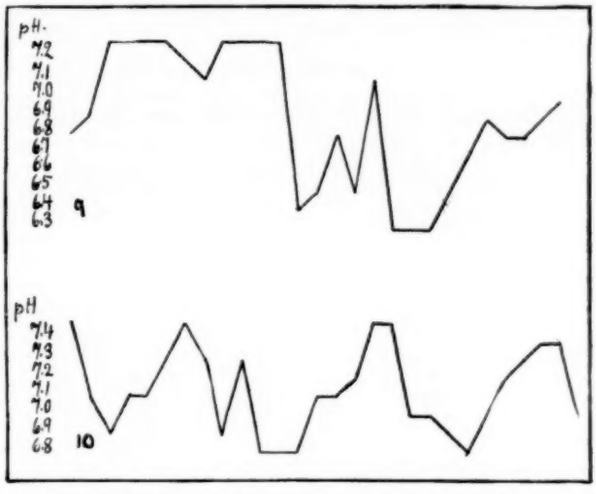

Fig. 3.—Tracings 9 and 10, from patients who had convulsions shortly before the experiment.

were subject to outbursts of temper and excitement. The abruptness and great extent of fluctuations are evident.

1819 West Polk Street.

Clinical Notes, Suggestions and New Instruments

ASCARIS PASSED BY MOUTH IN CASE OF LARYNGEAL DIPHTHERIA *

JENNIE KANTOR, M.D., CHICAGO

Cases of roundworms ejected through the mouth are rare. Cases of roundworms obstructing the larynx are still more rare. The mature parasites ordinarily occupy the upper portion of the small intestine. Occasionally they wander to distant parts such as the biliary passages, or up into the stomach and thence up through the esophagus into the oral cavity. In very rare cases the parasite has invaded the larynx and caused asphyxiation. Christie [1] states that he has known one boy to have vomited two worms. Law [2] lists a case in which *Ascaris lumbricoides* about 1 foot in length was passed by the mouth. Branch [3] states that in the West Indies he has known an ascarid to have passed by the nose and mouth. Tice [4] states that in the army medical museum is a specimen of a case in which an ascarid passed up through the esophagus and into the trachea, causing asphyxiation. Leon [5] cites the case of a child, aged 3, who died from asphyxiation by an ascarid. Postmortem showed a loop of *Ascaris* in the posterior mediastinum. The worm had descended from the larynx and trachea and had perforated through a portion of the right bronchus, appearing in the posterior mediastinum. Christie,[1] in a study of 800 postmortem reports of cases of *Ascaris lumbricoides*, states that there were only ten instances of migration; namely, one to the lung, one to the peritoneal cavity, one to the stomach and seven to the liver.

* From the John McCormick Institute for Infectious Diseases.

1. Christie, W. F.: Notes on the Migration of Ascaris Lumbricoides, J. Roy. Army Med. Corps **23**: 201-205, 1914.
2. Law, R.: Ascaris Lumbricoides About One Foot in Length Passed by the Mouth, Proc. Path. Soc. Dublin, new series, **2**: 150-152, 1862-1865.
3. Branch, C. W.: J. Trop. Med. **8**: 261, 1905.
4. Tice, Frederick: Practice of Medicine, Hagerstown, Md., W. F. Prior Company, Inc. **5**: 164, 1927.
5. Leon, N.: Mort par asphyxie produite par des ascarides, Centralbl. f. Bakteriol., I, Orig. **72**: 380-382, 1913.

REPORT OF CASE

R. R., a white boy, aged 3 years, residing in Chicago since birth, entered the Durand Hospital, Nov. 22, 1927, with the diagnosis of laryngeal diphtheria. The family and past history was essentially negative. The illness began, November 21, with fever, nasal discharge, croupy cough and gradually increasing dyspnea. The following day a diagnosis of laryngeal diphtheria was made by the physician; 10,000 units of diphtheria antitoxin was given intramuscularly, and the child was immediately sent to the hospital.

The temperature on admission was 101.4 F., the pulse 158, and the respiration 38, labored and with marked retractions of the soft parts of the chest. There was an anxious expression of the face, with marked cyanosis. The child was perspiring profusely. The tonsils were large and on the left was a patch of dirty gray, thick membrane with a filmlike exudate on the posterior pharyngeal wall. Intubation was done at once with immediate relief. A dose of 40,000 units of antitoxin was given intramuscularly. Within ten minutes the tube was coughed up, but shortly thereafter intubation had to be done again. At that time very little edema of the glottis was noted. On the next day the tube was coughed up and the respiratory difficulty became very marked. Intubation was done, but without relief. During this procedure it was noted that the glottis was very edematous. Retractions were becoming more pronounced; cyanosis was increasing, and the child began to have marked retching. The tube was removed, and almost directly thereafter two worms were ejected from the mouth, one of which was 23 cm. long and the other 26 cm. This was followed by only slight relief, and intubation was again instituted, this time with immediate relief.

Stool examination, both direct and by the concentration method, did not show any ova.

Throat and nose cultures taken on admission were positive for Klebs-Loeffler bacilli.

December 22, the child was discharged in good condition.

SUMMARY

Ascaris lumbricoides and laryngeal diphtheria conjointly causing laryngeal obstruction is an interesting coincidence. How much the worm contributed to the asphyxiation is questionable. The fact that the dyspnea was partially relieved by the extrusion of the worms would tend to show that there was some pressure on the larynx by the worms.

A SIMPLE TECHNIC FOR CHECKING THE GRAM STAIN

EDWIN W. HIRSCH, M.D., CHICAGO

In differentiating the gonococcus by staining with the Gram method, inaccurate interpretations are often drawn because the staining is improperly performed. It is easily possible unwittingly to make a gram-positive organism appear gram-negative by understaining with the gentian violet and by using too much destain and counterstain. A gram-negative organism will appear to be gram-positive, if it is overstained and improperly destained. To check each smear with a known gram-negative organism is difficult because it necessitates the keeping on hand of a culture of gram-negative organisms. To obviate any chance of error in interpreting the results of the Gram stain, I employ the following technic, which is a simple and efficient method of accurately checking each slide to prove that it has been stained correctly:

A toothpick or wooden applicator is drawn along the gum tooth margin and a small amount of débris, which may be found in any mouth, is picked up and spread near the right upper corner of the slide so as to cover a circular area about 0.5 cm. in diameter. The material to be examined is spread in the center of the slide in the usual manner and the entire slide is treated as if it contained one specimen. Thus the two smears will be stained alike. A drop of immersion oil is placed over both smears, but the test specimen in the corner is examined first. Since the débris always contains both gram-positive and gram-negative organisms, there should be a sharp contrast between the blue black of the former and the pinkish red of the latter. If the test specimen has been stained satisfactorily, which means that the gram-positive and gram-negative organisms are easily differentiated, the slide is drawn over to the center where the main specimen is examined. One can then state with assurance that the organisms are either gram-positive or gram-negative, for there can be no question concerning the correctness of the staining technic.

185 North Wabash Avenue.

Special Article

VINCENT'S DISEASE

In 1896 Vincent, a Frenchman, described a bacillus which he found in certain types of ulcerated tonsils. The organism had been described by Rauchfuss in 1893 and by Plaut in 1894. The disease is variously termed "Vincent's angina," "trench mouth disease" and "ulceromembranous stomatitis." Like all newly discovered diseases it seemed to be at first infrequent, but doubtless many cases of persistent ulcerations of the tonsils and other parts of the mouth were due to this germ before as well as after the dates given. Besides the fusiform bacillus at first described, it was later found that a spirochete was closely associated with this bacillus and that these two germs were eradicated by the same treatment. It was discovered later also that the disease was not confined to the tonsils but that ulcerations from the infection occurred on the gums, tongue, palate and buccal surfaces of the mouth. The ulcerations were often covered with a pseudomembrane which was readily removed, leaving a bleeding surface.

During the World War the disease attacked whole groups of soldiers, showing the ability of the infection to spread rapidly by contact. It was more prevalent in soldiers who were closely confined in the trenches; hence the term "trench mouth." Many soldiers returned to this country as chronic carriers of the infection. Gradually the disease has become more prevalent until now the number of cases is so greatly on the increase in many communities that preventive measures should be inaugurated.

Many systemic disturbances have been attributed to this infection, such as anemia and digestive disturbances.[1] Serious and even fatal streptococcic infection may be the outcome of neglected trench mouth. Noma, gangrenous stomatitis, so-called hospital gangrene, and gangrene in various parts of the body have been attributed to this infection.

The germs of Vincent's disease have been found in apparently healthy mouths, but Bloodgood[2] states he has never seen the disease in a mouth from which all the teeth have been extracted. He therefore concludes that the germ grows in the crevices between the teeth. The dentist's hands, his instruments (unless thoroughly sterilized) and especially his suction apparatus (which can be sterilized only with difficulty) can carry and cause infection. Bloodgood says that a dentist or a nurse treating this disease should wear rubber gloves and use all possible aseptic measures, and even in spite of such care office assistants may become infected.

The diagnosis of the disease is readily made by swabs taken from infected areas. The Vincent bacillus is a slender rod, generally with pointed ends, often slightly bent or even occurring in S form, and varies from 6 to 12 microns in length. The spiral forms of the organism are long, and may present from five to eight

1. Burns, E. M.: California & West. Med., September, 1926, p. 344.
2. Bloodgood, J. C.: Oral Lesions Due to Vincent's Angina, J. A. M. A. 88: 1142 (April 9) 1927.

curves and are actively motile. While sooner or later these bacteria may be found in various parts of the mouth, they may at first be confined to one side or to one tonsil. The disease may be not only subacute but chronic, and therefore there are many innocent carriers. Even when the disease is efficiently treated it is likely to recur, being persistent in some pocket of the tonsil or between the teeth. It may also occur in tonsillar tags, even when the tonsil has been removed. Therefore, after apparently successful eradication of the disease microscopic examinations should be made of swabs taken at intervals, for several months, from suspicious areas of the mouth.

If the disease is acute or the inflammation has become deeply seated there may be some fever, and the submaxillary glands or other neck glands may become swollen. The breath is always fetid, there is always more or less increased saliva and often a metallic taste in the mouth, and there may be patches of pseudomembrane. If the infection of the gums is not treated, the margins of the gums become necrotic, ulcerations dip down between the teeth, and the teeth become loosened and often must be extracted. In the streptococcic inflammation of pyorrhea alveolaris pus can be pressed from the gums, but in Vincent's disease pus may not be present, although the gums are so painful and tender that mastication is almost impossible.

The conditions that predispose to the acquisition of this disease are neglected mouths, carious teeth, inflamed gums and syphilis. Cigaret smoking has been stated to be a predisposing cause. Preventive measures include frequent cleaning of the teeth by a dentist, the filling of carious teeth, the extraction of those that cannot be saved, and active treatment of pyorrhea. Infected tonsils should be removed if they cannot be cured. If a bristle toothbrush is used, it should be renewed frequently, as it cannot well be sterilized.

When infection has occurred the patient should be told that the same care against infecting others must be taken as with any other contagious disease. The toothbrush should be abolished and gauze or cotton, which can be destroyed, should be used for cleansing the teeth.

The curative treatment found most effective is sodium perborate in about a 2 per cent solution, used as a mouth wash. Bloodgood advises that a thick paste be made of this substance and placed in the patient's mouth and be there retained for four or five minutes while an oxidizing froth develops. He finds that such treatment will effect a rapid cure in 95 per cent of the cases. On account of the prevalence of the infection he advises that the sodium perborate treatment be given after a dentist has finished any kind of dental work, whether the germ is present or not.

Arsphenamine or neoarsphenamine solutions have been used locally and also intravenously in obstinate cases. One injection is generally sufficient, and the dose should be much smaller than that given for syphilis. As a local treatment of the mouth or tonsil arsphenamine may be used in 10 per cent solution in glycerin, as recommended by Reckford and Baker,[3] after cleansing the region with swabs saturated with hydrogen peroxide solution or by spraying this preparation on the parts to be treated. Barker [4] finds that swabbing with a 5 per cent solution of arsphenamine and glycerin is curative. This is done twice daily at first and later once a day. Barker finds that arsphenamine, neoarsphenamine and silver arsphenamine are alike efficient.

Methylthionine chloride applied by the dentist in full strength powder to all parts of the mouth has proved rapidly curative, the patient using some simple mouth wash between the treatments.[5]

It is urged that the physician, as well as the dentist, should constantly bear in mind the frequency with which this germ is the cause of tonsil and mouth affections.

3. Reckford, F. F. D., and Baker, M. C.: Vincent's Angina Infection, J. A. M. A. **75**: 1620 (Dec. 11) 1920.
4. Barker, Creighton: M. J. & Rec., July 19, 1922, p. 88.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

W. A. PUCKNER, SECRETARY.

URASAL NOT ACCEPTABLE FOR N. N. R.

Urasal (Horner) is offered with the following indefinite and nonquantitative statement of composition: "Urasal (Horner) Granular Effervescent Contains: Hexamethylenamine, Piperazine, Lithia and Acid Benzoic in proportionate combination." The information sent to the Council stated: "Urasal is a pharmaceutical preparation in the form of an Effervescent Salt containing to each average dose of one dessertspoonful 7½ gr. Hexamethylenamine, 2 gr. Lithia Benzo Citrate and 1 gr. Piperazin Tartrate." Information in regard to the composition of "Lithia Benzo Citrate" was not given, nor was the weight of the product represented by "one dessertspoonful" stated.

The carton and label of Urasal (Horner) gives the dose for adults as a dessertspoonful three times a day before meals in a glass of water "or as directed by Physician." The claim appears that the preparation is "Recommended in the treatment of Rheumatism, Gout, Cystitis, Uric Acid, High Blood Pressure and all Affections of the Biliary Tract." The circular wrapped with the package paints an exaggerated picture of the toxemia brought about by intestinal stasis and declares that "The list of diseases and affections which have their origin in the poisoning of the body by the toxic condition of the alimentary tract is almost extraordinary" and states that some authorities believe cancer to be the outcome of long continued intestinal stasis. It is asserted that: "Among the prominent constitutional maladies which have sprung from toxemia produced by intestinal stasis, may be mentioned gout, rheumatism, rheumatoid arthritis, kidney affections, neurasthenia, obesity, some skin diseases, especially acne and eczema, neuralgia, pseudo-angina pectoris, high blood pressure, pyorrhea and oral sepsis, diseases of the liver and gallbladder and so on, and diseases of an infectious nature." The circular then proceeds with the long abandoned thesis that "excess of uric acid is largely responsible for many diseases of an organic and functional character" and advances the absurd claim that "the administration of Urasal (Horner) is the most effective medicinal means known of ridding the system of uric acid." The advertising for Urasal (Horner) quite ignores the now generally accepted limitations of the effects obtained by the administration of hexamethylenetetramine (methenamine, U. S. P.) which are in effect that the drug can exert an antiseptic action only in acid fluids, that it therefore cannot exert antiseptic action in the bile or other alkaline body fluid, and that in ordinary doses it is not a uric acid solvent (Useful Drugs, ed. 7, p. 100). The advertising also ignores the fact that piperazine is no longer regarded as an efficient uric acid solvent or as an efficacious remedy in the treatment of gout and rheumatism (Reports Coun. Pharm. Chem. 1918, p. 70) and that its use has been generally abandoned.

The Council finds Urasal (Horner) unacceptable for New and Nonofficial Remedies because it is an unscientific mixture of indefinite composition, marketed under a name which is not descriptive of its composition but therapeutically suggestive instead; and because it is marketed with unwarranted therapeutic claims and in a way which will lead to its indiscriminate and ill advised use by the public.

5. Dr. George C. Fahy, dental surgeon, New Haven, Conn.

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SATURDAY, JULY 28, 1928

A TEST OF THE VEGETARIAN DIET

Vegetarianism is a system of living which teaches that the food of man should be derived directly from the plant world. To the extent that such a doctrine is based on physiologic considerations, it ought to be subject to accurate experimental investigation. However, Mendel [1] has pointed out that, considered in the light of its history, vegetarianism involves something more than a mere dietetic program. It teaches that the use of animal food is morally wrong, as well as erroneous with respect to the processes of nutrition. The modern critics of the vegetarian propaganda have frequently overlooked the fact that this doctrine has repeatedly, if not always, been the expression of an ethical movement among its expounders, and that its development and transformation ought to be considered with reference to sociological, economic and ethical conditions as well as from the standpoint of physiology.

The student of the psychology of the vegetarian faith, as Mendel has further indicated, cannot fail to be impressed by the diversity of the elements that have convinced its expounders. Physiologic and anatomic arguments based on the comparative structure and functions of the digestive organs have vied with considerations of economy, morality and religion. From the standpoint of hygiene, the dangers of disease lurking in animal flesh have been pointed out; to other persons the encouragement of horticulture and the racial improvement incidental to an active agricultural life have offered an attractive theme. The vegetable kingdom can satisfy all; and the Bible itself has been drawn on to furnish lasting proof. McCollum [2] has remarked that while some of the arguments offered in sober earnestness in support of abstinence from flesh foods are suggestive of mental invalidism, others demand serious consideration and an answer based on scientific understanding.

It would be utterly unwarranted to maintain that vegetarianism is a physiologic impossibility. Thousands of devotees stand ready to refute such an assertion by the example of their own experiences. The real problem, from a nutritional standpoint, centers in the alleged superiorities of the vegetarian regimen. Even this question is complicated by the fact that the fleshless diet includes milk and eggs for certain "schools" of adherents — the lacto-ovo-vegetarians. Hence McCollum has maintained that the vegetarian diet has been viewed from the wrong perspective. It is possible, he avers, to make a fairly satisfactory diet of foods derived almost entirely from vegetable sources, but it is not easy to do so.

This conclusion is verified by numerous experiments on the white rat, an animal that has lent himself admirably to the investigation of problems in human nutrition. The latest report comes from the Peking Union Medical College in China,[3] where an attempt has been made to construct a purely vegetarian diet which, when tested with rats, is as good as a well balanced mixed diet. The Chinese physiologists point out that in view of the fact that the diet of the majority of the Chinese people is largely vegetarian, it seems desirable to study further the question of vegetarian diets with a laboratory animal of the omnivorous type. No great optimism was entertained at the outset of this work, but since there is a great deal of skepticism, among the layman and the profession alike, about the inferiority of vegetarian to mixed diets, a more conclusive evidence was much to be desired. It was realized that, from a practical standpoint in a purely vegetarian diet, adequate amounts of energy and protein can be obtained only from cereals and legumes. Since these foods do not contain enough vitamins and minerals, no combination of these alone can support normal growth and development without supplementing with vegetables, especially the leafy vegetables, which are rich in vitamins and minerals. The problem of the vegetarian diet, therefore, according to these writers, is to find a vegetable or a combination of vegetables that will effectively supplement the deficiencies of a cereal-legume ration. Unfortunately, the availability of the various nuts with their often excellent proteins was lost sight of. All the common cereals, probably the best legumes, and some twenty varieties of vegetables were experimented with, but no combination of them comparable with their standard diet was found. As far as growth is concerned, these studies indicate a greater degree of success than has been attained heretofore with purely vegetarian experimental diets; but this was not the ideal sought. The Peking investigators consequently conclude that no vegetarian diet is known at present which would afford optimal nutrition for an omnivorous animal, the albino rat. Since the metabolism of the rat has been shown to be similar to that of the human being, who also for many thousands of

1. Mendel, L. B.: Some Historical Aspects of Vegetarianism, Pop. Sc. Monthly, March, 1904, p. 457.
2. McCollum, E. V., and Simmonds, Nina: The Newer Knowledge of Nutrition, New York, Macmillan Company, 1925.
3. Wu, Hsien; and Wu, Daisy Yen: Growth of Rats on Vegetarian Diets, Chinese J. Physiol. **2**: 173 (April) 1928.

years has been omnivorous, it seems justifiable to the Chinese experimenters to conclude that optimal nutrition of human beings cannot be obtained with purely vegetarian diets.

SEXUAL ACTIVITY

Reproduction is one of the basic attributes of living cells and, as such, should interest physiologists as greatly as digestion, respiration or irritability. The fact remains, however, that investigation into the fundamental facts of reproduction and their relationship to the other functions of the body has assumed a far less important place in biologic advance in modern times than is merited. The indictment does not apply to obstetricians but rather to the groups to whom one might justifiably look for fundamental information on the immediate and far reaching effects of sexual activity of various degrees. The furtive interest of the layman has been discouraged by austere social conventions, but that the need for specific information on these points is pressing is indicated by the activities of such groups as the Committee for Research on Sex Problems of the National Research Council. This committee has set out to study a variety of problems connected with reproduction and its interest has extended into the fields of nutrition, animal behavior and vital statistics. One of the projects sponsored by this group has been carried out by Slonaker at Stanford University for several years and the results, recently published,[1] give answer to questions of long standing.

Taking advantage of the short life cycle of the rat, Slonaker has based his conclusions on observations in groups of animals showing the following characteristics: (1) no reproduction throughout life; (2) rearing of two or three litters only; (3) "normal" reproduction involving practically constant gestation and lactation; (4) "heavy" breeding, the young being killed at birth and the females remated immediately, resulting in constant pregnancy but no lactation, and (5) excessive sexual indulgence without the possibility of bearing young, since the females were hysterectomized. When the effect of various amounts of sexual indulgence on growth was studied it was found that pregnancy with lactation resulted in the greatest increase in body weight of the females in the group allowed "normal" breeding activities, while the virgins weighed least at a given age. Rats which had sexual indulgence showed a tendency to grow more rapidly in early life than abstainers, while the bearing of young at an early age appeared to inhibit body growth in later life. When food consumption is correlated with varying sex activity, it appears that prenatal growth requires a smaller expenditure of energy on the part of the mother than postnatal growth, and the extent of the difference emphasizes the tremendous drain which milk production makes on the maternal organism.

Present-day economic conditions exert such an important effect on the age of child-bearing that the objective results obtained by Slonaker on the length of sexual life in his groups of animals are significant. It was found that the span of reproductive possibility is a function of the numbers of offspring born rather than of the age of the mother. The light breeders were 50 per cent older than the heavy breeders when the last productive mating was made. When the total life span of the females is considered, the data show that the light breeders lived longest; the life span of the moderate breeders was second longest and that of the heavy breeders third. The virgins showed the shortest life span. It appears, on the basis of these experiments, that moderate reproduction is a factor favoring longevity. These conclusions were shown to apply to the male as well. Diseases of the lungs, to which the rat is peculiarly susceptible, caused the death of a greater percentage of virgins than of any other group, and the smallest incidence of death from this cause occurred among the light breeders.

Under the somewhat abnormal conditions of modern life, the question of reproduction must be considered in the light of social and economic conditions and the bearing of children has been frequently relegated to later periods of life or foregone entirely. The investigation carried on by Slonaker shows the wide physiologic age range during which reproduction is possible and indicates some of the advantages and requirements of this function. The studies emphasize again what was stated some time ago,[2] that in the process of reproduction the maternal organism gains substance as well as loses it.

THE CONSTITUTIONAL ASPECT OF DISEASE

It is obviously impossible to explain any condition of living matter on the basis of either constitution or environment alone when every state embodies the interreactions of the two, yet often the seemingly greater importance of one has led to too great a disregard of the other. Peculiarly, as everybody knows, studies of the constitution, the hereditary organic mechanism, of man are stimulated not so much by the usual reactions as by the unusual. The characteristic susceptibility and febrile reaction to typhoid infection arouses less interest in its constitutional phase than does unexpected natural immunity. Nobody searches out the factors underlying blood clotting to determine the method of their inheritance until the usual reaction fails, and then the constitutional lack rather than the occurrence is followed. With growth, too, the common concern has been about unusual growths. For any sort of adequate understanding of such problems persevering studies of constitutional behavior, both "normal" and "abnormal," have been necessary. If studies could ever ascertain

1. Slonaker, J. R.: Am. J. Physiol. **85**: 106 (May) 1928.

2. Slemons, J. M.: Nutrition of the Fetus, New Haven, Yale University Press, 1919.

the actual substances involved and so focus the studies of inheritance on chemically recognizable constituents, a progressive step would ensue. Realization of the importance of constitutional studies and the integrative relations of normal and abnormal conditions is evident in recent publications.

From work with mice many investigators now assert the dependence of cancer on hereditary factors, although different methods of inheritance are proposed. Miss Slye,[1] from prolonged investigation with inbreeding and hybridization, concludes that cancer-resistant and cancer-susceptible characters are inherited as dominant and recessive characters, respectively; the type of cancer, both primary and secondary, and the place of location also seem heritable and follow closely the mendelian pattern. Such thorough studies of other pathologic conditions and of normal characters are lacking, a regrettable fact noted by Miss Slye. Exactly corresponding studies on man are obviously impossible, but Miche [2] has reached similar conclusions from statistical studies of benign and malignant tumors without involving the lethal factor; i. e., that their etiologic factors are hereditary and mendelian with the incidence of a social dihybridism, and with independent segregation.

An excellent presentation of the fundamental facts and conceptions of heredity together with observations, discussions, theories, and tables of the pattern of inheritance of many abnormalities in human beings, is offered by Crew.[3] More recently two reviews, one on the constitutional aspects of orthopedic deformities [4] and the other on constitutional serology [5] and blood group investigations give evidence of increasing interest in the detailed studies of this aspect. In connection with blood grouping in particular does the opportunity for study seem alluring, for in this is the established fact of constitutional "normal" differences detectable by laboratory procedure. Already efforts have been made to determine the dependence, if any, of various diseases on the different groups. Hemophilia has been associated with the A substance. Some evidence is offered that among those with tuberculous infections and also those with certain nervous disorders the percentage in group B is increased. The possibility that eclampsia is based on the incompatibility of the blood of the mother and that of the fetus has also been studied statistically. No definite conclusions have been derived in any instance, but fundamental studies of this sort will undoubtedly be of value eventually, though perhaps in an unexpected direction.

What is the practical value of such investigations? Certainly outside of social medicine and eugenics there seems to be little. Avoidance of trauma as a contributing factor in stimulating recessive characters, and avoidance of surgical procedures in patients with hemophilia are among the known measures. It is conceivable, however, that, with more precise knowledge not only of the hereditary mechanism but also of the substances involved, unforeseen advantages might arise and prenatal medicine might assume new significance.

1. Slye, Maud: J. Cancer Research **10**: 15 (April) 1926; **11**: 54 (March), 135 (June) 1927.
2. Miche, F.: Bull. Acad. de méd. **97**: 510 (April 19) 1927; Schweiz. med. Wchnschr. **57**: 646 (July 2) 1927.
3. Crew, F. A. E.: Organic Inheritance in Man, Edinburgh, Oliver & Boyd, 1927.
4. Aschner, Berta; and Engelmann, Guido: Konstitutionspathologie in der Orthopädie, Erbbiologie des peripheren Bewegungsapparates, 1928.
5. Hirszfeld, Ludwig: Konstitutionsserologie und Blutgruppenforschung, 1928.

HAVE YOU HAD YOUR IRON TODAY?

Somehow the element iron has long been something to conjure with in relation to the human organism in both health and disease. Careful investigation has indicated that the quantity of iron involved in the quota that preserves a favorable iron balance under ordinary conditions in adult man approximates 15 mg. (one-fourth grain) a day. This is ordinarily thought of in connection with hemoglobin, the respiratory pigment of the blood. The transport of oxygen is thus closely linked up with the iron supply of the body. However, as Rose [1] has recently pointed out, not only in the red blood corpuscles but very generally in active cells, both animal and vegetable, iron is found as an essential part of the cell structure and functioning as a stimulator of the vital processes of the cell. Therefore, as a carrier of oxygen and as an activator of cell functions, iron has significance out of all proportion to the amount in the body—less than a tenth of an ounce, or the weight of a cent.

This "glorification" of the function of iron in the body has been responsible for considerable pseudo science and actual quackery. The contest between so-called food iron and ordinary inorganic salts of iron for supremacy in the therapeutic field has been overshadowed by the major claims of special iron preparations of secret nature that are alleged to figure largely in the athletic prowess of some well known prize fighter or the restoration of some conspicuous personage to vigor and vim. The billboards have sounded the call to have one's iron day by day. An untutored person might well conclude that the world is faced with an acute shortage of this life-giving element.

Sherman has estimated that the majority of American dietaries contain from 14 to 20 mg. of iron a day. Apparently, therefore, he states, the typical American dietary does not furnish any such surplus of iron as would justify the practice of leaving the supply of this element entirely to chance. The available data rather indicate that foods should be selected with some reference to the kinds and amounts of iron compounds which they contain. As the older analyses have been criticized with respect to their probable inaccuracy, it is important to realize that excellent new reports are now available. Forbes and Swift [2] have furnished

1. Rose, Mary S.: The Foundations of Nutrition, New York, Macmillan Company, 1927.
2. Forbes, E. B., and Swift, R. W.: The Iron Content of Meats, J. Biol. Chem. **67**: 517 (Feb.) 1926.

them for meats, and Peterson and Elvehjem[3] have examined about 150 common food materials. The figures range from 0.00015 per cent for lemon juice to 0.0192 per cent for parsley. Arranged in descending order with reference to their iron content, the classes of foods come as follows: dried legumes, green leafy vegetables, dried fruits, nuts, cereals, poultry, green legumes, roots and tubers, nonleafy vegetables, fish and fruits. Different samples of the same food material show great variations in their iron content; for example, twenty samples of cabbage varied from 0.00017 per cent of iron to 0.00059 per cent. Cabbage, celery and head lettuce, vegetables containing but little chlorophyl, were found to be low in iron. The juice of oranges and tomatoes contains less of the total iron than is proportional to the weight of expressed juice; the iron clings to the solids. Salt water fish contain more iron than fresh water fish. Fish with dark-colored tissue contain more iron than those with light-colored tissue. The dark meat of poultry is likewise higher in iron than the light meat. Perhaps parsley and beans will soon become rivals of the widely heralded raisins and bran as conveyors of ferruginous virtues.

Current Comment

VITAMINS IN SHELL-FISH

The range of the sources of the foods that have been incorporated into the human dietary is so large that one frequently wonders what may have been the chance circumstances which impelled our ancestors to try a peculiar food and also what there is in its composition which makes for a continued demand. One finds from observing those who eat in restaurants and select the various parts of the meal at the time it is eaten that certain items on the bill of fare are evidently consumed for reasons other than their energy value. Liberal expenditures may be made for strawberries in season or fresh tomatoes or the first green peas. In the class of such seasonal foods fall clams and oysters. These bivalves afford a protein of good biologic value and glycogen in some quantity, but they do not commonly form a staple part of the diet throughout the year. Nevertheless, they constitute a favorite food material. Recent studies in the Bureau of Chemistry and Soils in Washington[4] have shown that these shell-fish are comparatively rich in the accessory food factors but present some rather surprising differences. For instance, while oysters are rich in the vitamin B complex, neither hard nor soft clams contain it in appreciable quantities. Again, vitamin A is found in oysters in larger concentration than in clams. The latter, on the other hand, are richer in the antirachitic potency than are oysters. It has previously been shown that oysters contain the antiscorbutic vitamin in abundance.[5] The foregoing facts furnish a justification if, indeed, any is required, for eating these delectable shell-fish. It is interesting, from a scientific point of view, that the high antirachitic potency of the edible portions of these food animals is consistent with the facts known of other marine forms in this regard, notably the potency of the fish liver oils.

A TEST FOR LEAD ABSORPTION

In 1924, McCord, Minster and Rehm sought a simple laboratory method by which to determine the degree of lead absorption in exposed persons. Their purpose was to detect absorption before the symptoms of lead poisoning should appear and thus to enable preventive measures to be instituted before the disease could become well established. Furthermore, measurement of the lead hazard in various industries would then be possible. The significance of basophilic granules in the blood of persons exposed to lead is well known. On this basis McCord and his associates developed a method of causing the basophilic material to clump, in which form it was more uniformly detectable. A quantitative relationship between the amount of basophilic material present and the degree of lead absorption was tentatively established, whereupon the researchers published a preliminary article.[6] The work was continued and the U. S. Bureau of Labor Statistics has issued a further report.[7] Examinations were made of the blood of 1,045 persons divided into the following four classes: normal persons, persons with pathologic states other than lead poisoning, workers exposed to lead, and persons with clinical lead poisoning. In normal persons the number of basophilic red cells per cubic millimeter of blood may vary widely. As a rule it is less than 1,000, and in the 145 normal adults examined it never exceeded 5,000. Although several physiologic states are known to increase the proportion of basophilic cells, the worker in lead would not be likely to be subjected to any physiologic state in which the count would exceed 20,000. The pathologic states in which the number of basophilic cells is increased are as follows: lead intoxication, benzene poisoning, arsenic poisoning, all types of anemia in which there is regeneration, hemolytic icterus, the condition following hemorrhage, leukemias, acute infections, neoplasms involving the bone marrow, and polycythemia. Frank lead poisoning produces counts almost invariably over 7,000 and rarely over 100,000. Usually in lead poisoning the number of basophilic red cells per cubic millimeter falls between 7,000 and 50,000. Signs and symptoms of clinical lead poisoning may not appear even when the basophilic cell count is as high as 60,000 or 80,000. The investigation has shown that many office workers and others who, although engaged in lead industries usually are considered as unexposed, nevertheless may absorb much lead and thus may be in danger of developing clinical lead poisoning. The practical conclusion is that when

3. Peterson, W. H., and Elvehjem, C. A.: The Iron Content of Plant and Animal Foods, J. Biol. Chem. **78:** 215 (June) 1928. Elvehjem, C. A., and Peterson, W. H.: Ibid. **74:** 433, 1927. Peterson, W. H., and Hoppert, C. A.: J. Home Econom. **17:** 265, 1925. Peterson, W. H.; Elvehjem, C. A., and Jamison, L. A.: Soil Sc. **20:** 451, 1925.

4. Jones, D. B., and Murphy, J. C.: Proc. Soc. Exper. Biol. & Med. **23**, 519, 1926. Jones, D. B.; Nelson, E. M.; Murphy, J. C., and Devine, J. P.: J. Indust. & Engin. Chem. **20:** 648, 1928.

5. Randoin, L.: Compt. rend. Acad. d. sc. **177:** 498, 1923.

6. McCord, C. P.; Minster, D. K., and Rehm, M.: The Basophilic Aggregation Test in Lead Poisoning: Preliminary Report, J. A. M. A. **82:** 1759 (May 31) 1924.

7. McCord, C. P.: A New Test for Industrial Lead Poisoning, Bull. 460, Bureau of Labor Statistics, U. S. Department of Labor, Government Printing Office, April, 1928.

a worker who is exposed to lead develops a basophilic red cell count in excess of from 6,000 to 7,000 and when other conditions which might produce such a count are absent, that worker should be considered a lead poisoning prospect and treated accordingly.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The Orthopedic Hospital-School, Los Angeles, held its third annual homecoming of the Alumni Association, June 30. Among the entertainments provided was a mock track meet.——Sacramento Hospital, Sacramento, will complete its new $400,000 administration building in the fall. ——The Children's Hospital, Los Angeles, will soon start constructing a $145,000 addition and the old building will be altered. ——A $63,000 addition is to be erected by the Scripps Memorial Hospital, La Jolla.

Dr. Brainerd Honored.—About 200 friends of Dr. Henry G. Brainerd, Los Angeles, gave a dinner in his honor recently at the University Club on his seventy-sixth birthday. As a past president of the club he was presented with a gold pen. Dr. George L. Cole on behalf of his medical associates presented a portfolio suitably inscribed. A review of the attainments of the guest of honor was given by Dr. Joseph M. King. The address of the evening was by President von Kleinsmid of the University of Southern California. Dr. Brainerd is a former president of the California Medical Association.

Society News.—The San Bernardino County Medical Society met, June 5, at the new Desertair Hospital at Victorville. Dr. A. Bennett Cook spoke on "Goiter"; Dr. A. Timon on "Intubation and Tracheotomy," and Dr. James Ross Moore on late syphilis. At the request of the Boy Scouts of America the society agreed to furnish medical service for the camp, which opened July 2, for six weeks.——The San Mateo County Medical Society recently met at the Mills Memorial Hospital to celebrate the opening of a new wing which provides a maternity department and a new kitchen. Dr. Frank W. Lynch, professor of obstetrics and gynecology, University of California Medical School, San Francisco, read a paper on "Pelvic Infections." —— Dr. Fred J. Conzelmann, Stockton, addressed the Stanislaus County Medical Society recently on "Psychiatry."

Report on Placement Bureau.—The secretary of the California Medical Association reported at the annual meeting in Sacramento that the placement bureau maintained by the association located thirty physicians, twenty-five medical stenographers and one technician during the year. This service is gratuitous. Members are requested to help in this work by letting the association office (Balboa Building, 593 Market Street, San Francisco) find substitutes for them when they are sick or on vacation. An interesting sidelight of this service is that constant care must be taken to avoid listing calls sent in by lay medical organizations and health and hospital associations. The secretary says that these calls are usually camouflaged under the name of a physician employed by the organization. The number of them received indicates that health associations are not satisfied with the quality of man they have or that they are not able to secure enough to carry on their work.

CONNECTICUT

Increase in Mental Patients.—A census of feebleminded and epileptic persons made by the U. S. Department of Commerce with the cooperation of the state institution showed that the Mansfield State Training School and Hospital had a total of 144 first admissions during 1927, as compared with eighty in 1926 and thirty-nine in 1922. The increase in the number of first admissions in Connecticut between 1922 and 1927 was relatively greater than the growth in the state's population during that period. The first admissions in 1927 numbered 8.8 per hundred thousand of population, as compared with 2.7 in 1922. The first admissions to this hospital during 1927 comprised sixty-six males and seventy-eight females. The total number of patients present Jan. 1, 1928, comprised 358 males and 352 females.

IDAHO

Society News.—The Pocatello County Medical Society was host to physicians of southeastern Idaho, June 7, at a dinner at Pocatello following a medical clinic conducted by Dr. Noble W. Jones, Portland, Ore., at the general hospital. The speakers were Dr. Jones; Dr. Thomas F. Mullen, Pocatello; Dr. Alexander Barclay, Coeur d'Alene, the toastmaster, and Dr. Casper W. Pond, Pocatello. There were moving pictures on surgery of the hand. It was decided to organize the societies in southeastern Idaho as a permanent association and to hold two meetings a year——Dr. Virgil C. Belknap, Nampa, has been elected president of the Canyon County Medical Society for the ensuing year.

INDIANA

Society News.—Members of the Indianapolis Medical Society were guests of the Polk Sanitary Milk Company at their farms in Greenwood, July 20, where outdoor entertainment, games and refreshments were provided.——More than 100 physicians have signed up for a two-day course to be conducted by the Indiana Tuberculosis Association; several sanatoriums throughout the state will be used as teaching centers. —— Dr. Rudolph Duenweg has resigned as president of the board of health of Terre Haute.

Dr. Bulson Heads Department — Other Changes.—Dr. Albert E. Bulson, Jr., has been made head of the department of ophthalmology of the Indiana University School of Medicine, Indianapolis. Dr. Henry O. Mertz has been made associate. The following are additions to the faculty:

Dr. William H. Kennedy, associate in medicine (radium therapy).
Dr. Gerald W. Gustafson, assistant in obstetrics.
Dr. Edwin Lee Libbert, assistant in medicine.
Dr. Walter Phillips Morton, assistant in genito-urinary surgery.
Dr. John Moore Taylor, assistant in dermatology and syphilology.
Dr. Walter Benton Tinsley, assistant in dermatology and syphilology.
Dr. George W. Wood, assistant in gynecology.
Dr. Joseph Jerome Littell, assistant in rhinology, otology and laryngology.
Dr. Bert Edward Ellis, assistant in rhinology, otology and laryngology.
Guy Worthington, assistant in rhinology, otology and laryngology.
Dr. Henry Wilburt Irwin, assistant in rhinology, otology and laryngology.

KANSAS

Advertising by Radio.—The house of delegates of the Kansas Medical Society, at its annual meeting in Wichita, voted to ask the National Board of Radio to revoke the license of Station KFKB, located at Milford, and operated by one Dr. J. R. Brinkley. The resolution stated that the sole purpose of the station was to lure patients to Brinkley's hospital for his benefit; that nothing in the lectures was of educational value to the public, and that many misleading statements were made. Further information concerning Brinkley was published by the Bureau of Investigation in THE JOURNAL, Jan. 14, 1928, p. 134.

School Advised to Limit Outlying Clinics.—The Kansas Medical Society at its annual meeting, May 10, voted to advise the medical school of the state university to limit its activities to the legitimate purposes for which it was founded. The school was located at Kansas City chiefly because of the clinical material available for teaching purposes of which it is said to have sufficient to assure the healthy growth of the school. But members of the faculty have gone over the state organizing clinics in competition with practicing physicians, who stood by the institution in the past. The society believes that this course is unnecessary and harmful in that it pauperizes citizens and teaches them that the medical profession owes medical service "for every cause that may be launched whatsoever."

MARYLAND

Personal.—The home of Dr. Howard A. Kelly, professor emeritus of gynecology and obstetrics, Johns Hopkins University School of Medicine, Baltimore, was partly destroyed by fire, July 14, at an estimated loss of $15,000.

Smallpox Near the State Line.—An investigation disclosed that at present there are no cases of smallpox in Washington County, Maryland, although on the Pennsylvania side of the state line there are said to be about fifty cases near Mason and Dixon. The state department of health made the investigation after the death of a woman living in Maryland near Mason and Dixon. The Maryland State Department of Health has sent sufficient vaccine to vaccinate every one in the community, and this will be done at once.

Clinics for Crippled Children.—The director of the state health department plans to conduct clinics for crippled children in various parts of the state throughout the summer. The last one was at Elkton, July 10. Clinics have been held in Oakland, Frederick and Talbot, and in Washington and Allegany

counties. The Maryland League for Crippled Children estimates that there are about 4,500 persons under 21 years of age who are crippled, and that about 2,000 of these live in the counties. The study of the crippled children in the city of Baltimore indicated that about half of them were crippled by infantile paralysis and about 16 per cent by tuberculosis. Surveys are under way in several places to discover the number of crippled children of school age.

MASSACHUSETTS

Epidemic of Septic Sore Throat is Over.—Dr. George H. Bigelow, commissioner of health of Massachusetts, writes as follows concerning the epidemic of septic sore throat noted in THE JOURNAL last week:

> The epidemic of septic sore throat in Lee, Mass., is over. The onset was July 1 and the infected cow and infected milkers have been identified. The milk in this area is now all pasteurized and tuberculin tested and following the introduction of these preventive measures all new cases fell off abruptly. Two of the milk inspectors of this department are in this area supervising the milk supply and the department plans to set up a milk inspection demonstration in the Berkshires at once. No new case has now been reported for a week. As always happens following such a calamity, the milk supply of this community has probably never been as safe as it is at present and no one need have any apprehension in visiting the Berkshires now. A detailed report of the outbreak is of course being prepared for publication.

Report on Clinics and Health Associations.—The council of the Massachusetts Medical Society last October created a committee on clinics and health associations comprising one member from each district medical society for the purpose of making an investigation. The committee reported at the annual meeting of the state society in Worcester in June. The most prevalent abuses were said to be the following: 1. Free clinics generally are treating any patient who will apply, and they are soliciting patients through health agencies. 2. Nurses, with rarely an exception, are sending their patients to free clinics. 3. Hospitals are soliciting free bed donations with a promise that the donor may send in patients for free treatment regardless of the financial status of the patients. 4. Consultation clinics are found to be perhaps the worst offenders against the ethics of medicine. When these clinics first started, patients were required to have a letter from a physician; now, practically every clinic has its consultation clinic or pay clinic connected with the free clinic "where the wheat is separated from the chaff and turned over to the pay clinic." 5. Clinics and health examinations for children with the aid of soliciting nurses are being used to turn the patients against the practicing physician who is not a specialist. 6. Clinics which used to require patients to have a letter from a physician do not now need the physician as they have the health organizations whose nurses are out working for them at all times. A night clinic in Boston pays the physicians so much per night; patients are solicited for the physician, who shares the fee with the solicitor. At another Boston clinic, a fee of from $10 to $35 for minor operations is charged, and the money goes into a general fund. At this clinic the physician gets nothing. The committee states that the greatest growing evil in fostering clinic abuses is the nurse, whether she represents the Red Cross, the public school or the public welfare. The industrialist is commercializing medicine. He has in his establishment an emergency room with a nurse, and in the separate departments a "sub-nurse" to give first aid to employees. She sends the patient to the emergency room if the injury is too serious for her to dress, a factory physician is called if necessary and he sends the patient to the hospital, where the treatment is free. The committee believes that these nurses are practicing medicine. The Plymouth County Medical Society voted to refuse to treat patients at free clinics who have not been referred by family physicians. The situation became such in the Plymouth district that nurses were given cards by the hospital to distribute to any one who needed treatment. The nurses signed the cards and a considerable number of patients who were being treated by physicians were solicited, with the result that the physicians lost their patients.

MICHIGAN

Upper Peninsula Meeting.—The thirty-first annual meeting of the Upper Peninsula Medical Society will be at Newberry, August 1-2. There will be a business meeting, a special program of entertainment and a scientific program including, among others, Drs. Hugh Cabot, Ann Arbor, on "Prompt Treatment of Compound Fractures"; Clifford G. Grulee, Chicago, "Constipation and Diarrhea"; George E. McKean, Detroit, "Kidney Conditions"; Clifton F. McClintic, Detroit, "Surgery Involving the Sympathetic Nervous System"; George C. Stewart, Hancock, "Pernicious Anemia"; Albert M. Barrett, Ann Arbor, "Mental Diseases"; Salvatore Lojacono, Marquette, "Complications of Tuberculosis and Their Treatment," and Arthur J. Carlton, Escanaba, "Auricular Fibrillation." There will be a banquet and dance, Wednesday evening.

NEW JERSEY

Hospital News.—Twelve physicians on the staff of the heavily endowed Newcomb Hospital at Vineland are reported to have resigned, June 28, four of whom were from Philadelphia. According to the New York *Times*, the resignations were the result of a set of rules promulgated by the superintendent.

Society News.—The Bergen County Medical Society has appropriated $1,000 to carry on an ethical publicity campaign during the year. The society came to this conclusion after an investigation by a committee. All material is to be released under the name of the county medical society.——Dr. John Rogers, Cornell University Medical College, New York, addressed the Somerset County Medical Society, June 14, on "Abnormalities of the Thyroid."——The New Jersey Board of Pharmacy held its annual reorganization meeting, July 19, in Trenton. Harry E. Bischoff, Union City, was made president.

Personal.—Dr. Henry O. Reik, Atlantic City, executive secretary, New Jersey Medical Society, was tendered a testimonial dinner at the Hotel Chelsea, May 26. Dr. Reik was presented with jewelry.——George M. Beringer, a past president of the American Pharmaceutical Association, formerly editor of the *American Journal of Pharmacy* and chairman of the Board of Trustees of the Philadelphia College of Pharmacy, and member of the commission of revision of the United States Pharmacopoeia and of the committee of revision of the National Formulary, died, June 23, of paralysis, aged 68.

Druggists, Chiropractors and Herbalists Prosecuted.—The New Jersey State Board of Medical Examiners reports the following prosecutions for practicing medicine without a license:

John De Francisco, Lyndhurst, druggist, paid the penalty.
David Tepper, Lyndhurst, druggist, pleaded guilty.
Annie Lord, Atlantic City, naturopath, found guilty.
Leo A. Green, Red Bank, druggist, paid the penalty.
Charles Geiger, Paterson, electrotherapist, paid the penalty.
John P. Field, Newark, chiropractor, paid the penalty.
Rudolph E. Brandman, Hoboken, licensed osteopath, paid the penalty.
Carmelo Pattelo, Jersey City, druggist, paid the penalty.
Bernard Katsin, Red Bank, druggist, paid the penalty.
George A. Boyer, Camden, chiropractor, pleaded guilty.
Clyde H. Faust, Collingswood, chiropractor, paid the penalty.
Frank E. Gaige, Milford and Phillipsburg, chiropractor and naturopath, found guilty. Appealed.
Frank L. Fischer, Newark, chiropractor, found guilty.
Rocco Trillo, Camden, herbalist, found guilty.
Vincenzo Nuzzi, Camden, herbalist, found guilty.
Victor I. Chestnut, Camden, druggist, pleaded guilty.
Loring S. Strang, Camden, druggist, pleaded guilty.
Walter D. Shuler, Audubon, chiropractor, paid the penalty.

NEW YORK

Increase in Mental Patients.—A preliminary report of a census of mental patients made by the U. S. Department of Commerce for 1927 shows that the sixteen state hospitals of New York had a total of 8,473 first admissions during the year, as compared with 7,218 in 1922. The increase in first admissions to these hospitals between 1922 and 1927 was relatively greater than the growth in the state's population, as shown by the fact that first admissions numbered 74.2 per hundred thousand of population in 1927 as compared with 67.2 in 1922. The number of mental patients in the state hospitals of New York has steadily increased from Jan. 1, 1910, when it was 30,151, to Jan. 1, 1928, when it was 45,131, and the ratio of such patients per hundred thousand of general population increased during this period from 330.8 to 392.7.

Buffalo Helps Practicing Physicians.—The board of managers of the Buffalo City Hospital, Buffalo, has put into effect a plan which will benefit both the medical practitioners and the community. All applicants for admission to this hospital are rated as pay, part-pay or free in accordance with the general municipal law of the state. The plan recently adopted is to send two statements to the family physician of every patient entering the hospital, one on admission and one on discharge. If the patient does not have a private physician, the statement goes to the physician last employed by him. The information given will include the financial rating given the patient by the hospital and the private physician's opinion will be requested as to whether he considers it proper. This letter states that private physicians are privileged to treat full-pay patients in the wards of the hospital and that they may visit part-pay and free patients for scientific or personal reasons provided no charge is made. After discharge of the patient from the hospital, the medical observations of the attending

and house staffs are forwarded to the physician. This letter states also that it is the aim of the board of managers of the hospital and the council of the University of Buffalo to make the hospital helpful to the medical and dental professions, and that the clinical and laboratory services are at the disposal of physicians and dentists to that end.

Preparation for District Branch Meetings.—Officers of the district branches of the Medical Society of the State of New York held conferences recently to plan for the annual meetings. The First District Branch will hold its meeting, October 18, at Briar Cliff Manor. The program will contain papers on the serum treatment of pneumonia and on a surgical subject, and medical moving pictures. The Third District Branch will meet, October 11, in Hudson. The program will consist of dry clinics, papers on arthritis, undulant fever, maternal mortality and the gallbladder, and a medical moving picture. The Fourth District Branch will meet, September 21-22, in St. Lawrence County. There will be clinics in medicine, surgery and roentgen-ray examination at the Hepburn Hospital, Friday afternoon, and mental clinics at the state hospital Saturday morning. The Fifth District Branch will meet, October 9, either in Rome or Utica. The program will comprise papers on sinus infections, blood transfusions, skin conditions, standards of prenatal care and medicine. The Sixth District Branch will meet, September 25, at the Arnot-Ogden Hospital, Elmira. The program will comprise papers on expert testimony, fractures, appendicitis, urology and maternal mortality. The seventh District Branch will meet, September 27, at the Oak Hill Country Club, Rochester. The program will comprise papers on poliomyelitis, clinical pathology, and various topics in medicine and surgery, and probably medical moving pictures, which Mr. Eastman has recently prepared. The Eighth District Branch will hold its annual meeting, October 2, at the city hospital, Buffalo. The program will comprise clinics in the morning on surgery, medicine, tuberculosis and, the *New York State Journal of Medicine* notes, on all activities of the hospital. In the afternoon papers will be read by one or two invited guests and by the same number of local men.

New York City

Society News.—The Central Blood Transfusion Bureau, opened in March by about nine hospitals, has 200 donors on its certified list. The bureau needs $5,000 for next year and after that $2,000 annually for five years.——Prof. Harry A. Overstreet, College of the City of New York, addressed the Bronx County Medical Society, June 21, on "The Point of View of the New Psychologist."——Dr. Charles E. Hamilton has been elected president of the Brooklyn Society of Internal Medicine for the ensuing year.

Declaration of Appreciation.—At the annual meeting of the Medical Society of the State of New York, Albany, in May, the house of delegates declared its warm appreciation of the fraternal and professional aid given its members by the New York Academy of Medicine, noting that the academy accords to the state society the use of its facilities, including the library and bureau of clinical information, and has given office rooms to the society at a nominal rental, thus making it possible for visitors to take advantage of the clinical resources of New York City.

Changes in Personnel of Rockefeller Institute.—The board of scientific directors of the Rockefeller Institute for Medical Research announces, among others, the following changes in personnel on the scientific staff:

NEW APPOINTMENTS

Dr. Robert Hannon, associate.	Dr. Christopher Johnston, assistant.
Dr. Henry R. Muller, associate.	Dr. Currier McEwen, assistant.
Dr. Cornelius P. Rhoads, associate.	Dr. Norman S. Moore, assistant.
Robert B. Corey, Ph.D., assistant.	James F. Pearcy, Ph.D., assistant
Dr. Martin H. Dawson, assistant.	Albert L. Raymond, Ph.D., assistant.
Malcolm Dole, Ph.D., assistant.	Alexander Rothen, D.Sc., assistant.
Dr. Thomas Francis, Jr., assistant.	Charles A. Slanetz, Ph.D., assistant.
Dr. Donald C. Hoffman, assistant.	

PROMOTIONS

Louis A. Mikeska, Ph.D., to associate member.
Edwin L. Gustus, Ph.D., to associate.
Dr. Charles H. Hitchcock, to associate.
Dr. William S. Tillett, to associate.
Dr. Perrin H. Long, to associate.
Rene J. Dubos, Ph.D., to assistant.

RESIGNATIONS

Dr. Fred W. Stewart, to accept appointment as assistant pathologist at Memorial Hospital and associate in pathology at Cornell University Medical College.

Dr. Clifford L. Derick, to accept appointment as assistant professor of medicine at the Medical School of Harvard University and as physician to the Peter Bent Brigham Hospital, Boston.

NORTH CAROLINA

Personal.—Dr. Robert D. Jones, New Bern, was elected president of the North Carolina Hospital Association at the annual meeting, May 18.——Dr. Charles A. Julian Greensboro, has been appointed medical director of the Greensboro Life Insurance Company.——Dr. Joshua F. Abel, Waynesville, has been commissioned as surgeon for the Southern Railroad in his community.——Dr. Hamilton W. McKay, Charlotte, has resigned from the staff of the Crowell Clinic. Dr. McKay was recently chosen a trustee of Davidson College and made president of the alumni association.——The print shop of *Southern Medicine and Surgery*, owned by Dr. James M. Northington, Charlotte, was recently destroyed by fire.

Medical Society Creates Foundation.—At its last meeting, the Medical Society of the State of North Carolina created the North Carolina Medical Foundation and named the Wachovia Bank and Trust Company as fiscal agent. The purpose of the foundation is to encourage gifts for charitable purposes connected with the activities of the medical society. The declaration of trust states that without limiting in any way the charitable purposes for which the funds may be used and merely by way of illustration, they shall be available for the promotion of medical science, the encouragement of postgraduate medical instruction, the correlation of medical activities, the education of the public about medical matters, the helping of indigent physicians and their families, and for any other object that may reasonably be construed as promoting medical science and practice in the state. The foundation is authorized to receive gifts by will or deed or otherwise of property of any kind. The distribution of the funds is in the hands of a committee consisting now of Drs. James P. Matheson, Charlotte; Martin L. Stevens, Asheville; Lewis B. McBrayer, Southern Pines; Charles O'H. Laughinghouse, Raleigh, and Edward J. Wood, Wilmington. One member will be elected at the annual meeting of the medical society each year. Physicians and laymen generally now have an opportunity to leave in their wills gifts, large or small, or to make gifts of money or other property for the promotion of the foundation. They may make gifts without designating their use, in which case the committee will use its own judgment, or they may designate how their gifts shall be used. Through this foundation, contributors will gradually create a reserve fund for the promotion of medical science and practice similar in its beneficence, the announcement states, to that carried out by the great foundations created by Rockefeller, Sage, Carnegie and Harmon. The business management of the North Carolina Medical Foundation will be in the hands of the trustees, which is given wide powers of investment and reinvestment and which shall make its report annually to the foundation committee.

NORTH DAKOTA

Society News.—Dr. William A. O'Brien, assistant professor of pathology, University of Minnesota Medical School, addressed the Northwestern District Medical Society of North Dakota, Minot, May 21, on "The Basic Science Act in Minnesota" and "Early Diagnosis of Malignancy."——Governor Sorlie appointed Dr. Thomas Mulligan, Grand Forks, a member of the state board of medical examiners, June 26, to succeed Dr. Henry H. Healy, resigned.

OHIO

Five in One Family Die of Trichinosis.—The entire family of Lucien Beckman, in Wood County, became ill with trichinosis late in June and five of them, the father and four children, died. This family raised, killed and dressed its own meat and had been repeatedly warned against the practice of eating raw pork. Illness began about two weeks after the meat had been eaten. *Trichina spiralis* was found in large numbers in samples of the meat forwarded to the state department of health by the Wood County health commissioner. In the preceding five years in Ohio there had been only three deaths from trichinosis.

Personal.—Dr. Walter M. Simpson, Dayton, gave a Mayo Foundation lecture at Rochester, Minn., June 22, on "Experiences with Fifty-Three Cases of Tularemia Occurring in Dayton."——Dr. Robert D. Maddox, superintendent of the City Hospital, Springfield, has tendered his resignation on account of ill health, effective, September 1.——Dr. Theodore R. Meyer, Parkersburg, W. Va., has been appointed health commissioner of the city of Mansfield and Richland County, succeeding Dr. Charles L. Shafer, who has been acting health commissioner for about a year.——The new president of the staff of the Piqua Memorial Hospital is Dr. James R. Caywood.——

Dr. and Mrs. Joseph M. Hanley, Chillicothe, recently celebrated their golden wedding anniversary. Dr. Hanley is a former health commissioner of Chillicothe.

Notes on Sanitation in Cincinnati.—In the first number of *Cincinnati's Health* is a report of the bureau of sanitation for 1927. It appears that the bureau made 112,722 inspections and 21,535 service calls to distribute health department literature. The unit cost of this service was 15½ cents. The bureau inspected the thirty-three swimming pools, and the water supply on boats, and barber shops, beauty parlors and theaters, and gave special attention to the flushing of sidewalks, heating and ventilation, odorous trades, rodent extermination and fly and mosquito control. The dry sweeping of sidewalks is prohibited by ordinance when the temperature is above freezing; a campaign to have citizens sign pledges to flush the sidewalks with a hose daily resulted in 2,644 names on the "Roll of Honor." The drinking water used on Ohio River boats which dock at Cincinnati was examined daily in cooperation with the U. S. Public Health Service, and as a result river boats patronized by Cincinnatians either use water from certified sources or are equipped with approved stills. To enforce the orders of the health department, the bureau resorted to prosecution in ninety-two cases, in all of which convictions were obtained. It is interesting to note that five prosecutions were for littering the streets; three for dry sweeping of sidewalks; one for expectorating on the floor of a theater and one for keeping chickens in the attic.

PENNSYLVANIA

Typhoid at Johnsonburg.—The outbreak of typhoid in Johnsonburg amounted to fourteen cases on July 10, at which time the source of the infection was found to be the drinking water used at an industrial plant. The cause of the infection has been corrected.

Personal.—Dr. Samuel Calvin Smith, Philadelphia, was given the honorary degree of doctor of science at the commencement of Bucknell University, June 6.——Dr. James D. Lewis has resigned as director of public health of Scranton. ——Dr. Benjamin Rush Field has resigned as superintendent of the Easton Hospital, Easton.——Dr. Henry A. Laessle has been elected president of the Philadelphia Laryngological Society; Dr. Gabriel Tucker, vice president, and Dr. Herman B. Cohen, secretary.

Society News.—Beginning at 11 a. m., August 1, the Third Councilor District of the Medical Society of the State of Pennsylvania will hold a meeting at Dallas, and after 1 o'clock will spend the day at golf, tennis, cards and trap shooting. Among the speakers are Drs. Arthur C. Morgan, Philadelphia, president of the state society; Thomas G. Simonton, Pittsburgh, president elect; Paul R. Correll, Easton, chairman, joint legislative conference committee; James Allen Jackson, Danville, chairman, committee on mental hygiene; Theodore B. Appel, Lancaster, state health commissioner, and Edward B. Heckel, Pittsburgh, chairman, Board of Trustees, American Medical Association.

Philadelphia

Hospital News.—The Eagleville Sanatorium, Fitzwater Street near Broad, opened its new $250,000 dispensary building, June 10, which was the gift of Mr. and Mrs. Jerome H. Loughheim in memory of their parents.——Dr. Samuel L. Gittelson has been elected president of the medical board of Mount Sinai Hospital.

Society News.—The Philadelphia Institute for the Study and Prevention of Nervous and Mental Diseases has been incorporated; the president is Dr. Lawrence F. Flick.——The special study course arranged by the cancer committee of the Philadelphia County Medical Society recently was attended by 134 persons, seven of whom were naval medical officers. The instruction was in the form of lectures at hospitals and at the home of the county medical society.

TEXAS

Health at El Paso.—Telegraphic reports to the U. S. Department of Commerce from sixty-nine cities with a total population of 30 million, for the week ending July 7, indicate that the highest mortality rate (21.3) was for El Paso and that the mortality rate for the group of cities as a whole was 11.8. The mortality rate for El Paso for the corresponding week last year was 14.7, and for the group of cities, 11.

Society News.—At the organization meeting of the Texas Neurological Society, May 8, Galveston, Dr. John S. Turner, Dallas, was elected president; Dr. James Greenwood, Houston, vice president, and Dr. Wilmer L. Allison, Fort Worth, secretary.——Dr. Edwin G. Schwarz, Fort Worth, was elected president of the Texas Pediatric Society, May 9, at Galveston, and Dr. George B. Cornick, San Antonio, and Dr. Ramsey Moore, Dallas, vice president and secretary, respectively.——At a meeting of the Texas Railway Surgeons Association, Galveston, May 7, Dr. Samuel P. Cunningham, San Antonio, was elected president; Drs. David M. Higgins, Gainesville, and Joseph J. Robertson, Kingsville, vice presidents, and Dr. Ross B. Trigg, Fort Worth, secretary.——Dr. Davis Spangler, Dallas, was elected president of the Texas Radiological Society, at the May 7 meeting in Galveston; Drs. Jesse B. Johnson, Galveston, president-elect; Cornelius F. Lehmann, Jr., San Antonio, and Winfield G. McDeed, Houston, vice presidents, and Clarence P. Harris, Houston, secretary.——Dr. Felix P. Miller, El Paso, president of the state medical association, gave the commencement address at the University of Texas School of Medicine, Galveston, May 31.——Dr. William L. Helms has been appointed health officer of the city of Taylor.——The campaign for $2,000,000 for Baylor University opened at Waco, July 20; the principal speakers were Samuel P. Brooks, LL.D., president of the university, and Dr. Edward H. Cary, on the staff of the medical school and a trustee of the American Medical Association.

WASHINGTON

Hospital News.—The estate of Julius Galland has given $10,000 for the erection of an isolation hospital at the Spokane Children's Home, which has been conducted by the Ladies Benevolent Society for many years. There are about 100 children in the home.——Dr. George A. Downs has been elected president of the Sacred Heart Hospital, Spokane, for the ensuing year, succeeding Dr. Robert J. Kearns.

Society News.—The Snohomish, Skagit and Whatcom county medical societies held their eighth annual banquet at Bellingham, June 13, following the golf tournament. On the scientific program, among others, was Dr. Syvert H. Johnson, Bellingham, whose subject was "Classification, Etiology and Prevention of Goiter."——Dr. A. J. Ghiglione has been elected president of the Seattle Academy of Surgery.——Dr. Raymond A. Quigley has been elected president of the staff of the Providence Hospital, Everett, for the ensuing year.——Dr. Howard J. Knott, Seattle, has been elected president of the Great Northern Railway Surgeons' Association.

GENERAL

World War Vocational Training Ends.—The educational phase of the rehabilitation of disabled World War veterans came to an end, July 1, according to a Washington dispatch to the Chicago *Tribune*. About 128,500 men have been trained with the purpose of making them self-supporting. The government provided vocational training for all men rated with a disability of 10 per cent or more. Besides paying for tuition and books, it gave $100 a month to single men and $135 to married men, with additional allowances for dependents. Of the 334,494 who applied for training, 216,431 were rated as entitled to full courses; of these 58,873 later dropped out. A large variety of courses was offered in a large number of schools. Poultry farming was most popular; among those who graduated in this course were 100 blind men. Then, in point of numbers, came general farming, mechanics, electricians, bookkeepers and architectural and mechanical draftsmen. This service is said to have cost the government more than $600,000,000.

Pharmaceutical Association Meets in Maine.—The seventy-sixth annual meeting of the American Pharmaceutical Association will be held at Portland, Maine, August 20-25. Dr. Hugh S. Cumming, U. S. Public Health Service, will address a general meeting, Thursday afternoon, August 23; J. T. Lloyd, Ph.D., will give an illustrated lecture on "Coca Eaters of Colombia"; and Edward Kremers, Ph.D., on "An Italian Apothecary of the Fourteenth Century." The governor of Maine and the mayor of Portland will give short addresses. Scientific papers will be read before the sections. There will be a discussion of the progress of the headquarters building (THE JOURNAL, June 16, p. 1960). A program of entertainment has been provided. Meeting at about the same time in Portland will be the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the Conference of Pharmaceutical Association Secretaries, and the National Conference of Pharmaceutical Research, and, in Boston, the Plant Science Seminar.

Society News.—Mr. John D. Rockefeller, Jr., New York, is reported to have contributed $2,000,000 to the new students' quarters being erected in Paris, known as the Cité Universitaire. A number of countries have made arrangements or have completed their dormitories in this center, making necessary a central administration building, for which purpose the foregoing gift was made. In addition, Mr. Rockefeller will

give annuities for three years for the upkeep (THE JOURNAL, June 16, p. 1960).——The thirty-eighth annual meeting of the American Electrotherapeutic Association will be at the Hotel Statler, Boston, September 10-14. Two days will be devoted to the visitation of the physical therapy clinics and the plant of the General Electric Company at West Lynn. There will be exhibits demonstrating new apparatus. All licensed physicians are invited. The secretary is Dr. Richard Kovacs, 223 East Sixty-Eighth Street, New York.——The National Conference on Pharmaceutical Research, of which the chairman is Henry V. Arny, Ph.D., New York, will hold its seventh annual meeting at the Eastland Hotel, Portland, Me., August 18; the conference comprises delegates from fifteen affiliated organizations.——At the annual meeting of the American Society of Clinical Pathologists, Minneapolis, June 8-11, Dr. Frank W. Hartman, Detroit, was made president; Dr. James H. Black, Dallas, Texas, president-elect; Dr. Charles R. Drake, Minneapolis, vice president, and Dr. Harry J. Corper, Denver, secretary-treasurer.

Idaho, Montana, Wyoming Meeting at Yellowstone.—For the first time, the Idaho, Montana and Wyoming state medical associations will hold their annual meetings jointly at the Canyon Hotel, Yellowstone National Park, August 27-29. The program will comprise the reading of papers from 8 until 1 o'clock each day with sightseeing in the afternoons, and business meetings of the respective houses of delegates from 7:30 to 9 p. m. Each person is to make his own reservations. He should address the Yellowstone Park Hotel Company or the Yellowstone Park Camp Company, Yellowstone Park, Wyoming. The guest speakers will include:

Dr. Jabez N. Jackson, Kansas City, Mo., Past President of the American Medical Association.
Dr. William S. Thayer, President of the American Medical Association, Baltimore.
Dr. Frank Billings, Chicago.
Dr. William J. Mayo, Rochester, Minn.
Dr. Russell M. Wilder, Rochester, Minn.
Dr. Dean D. Lewis, Baltimore.
Dr. Julius H. Hess, Chicago.
Dr. Jacob R. Buchbinder, Chicago.
Dr. Harry S. Gradle, Chicago.
Dr. Henry Schmitz, Chicago.
Dr. Erwin P. Zeisler, Chicago.
Dr. Clarence W. Hopkins, Chicago.
Dr. Stuart S. Pritchard, Battle Creek, Mich.
George A. Soper, Ph.D., New York.
Dr. Robert C. Coffey, Portland, Ore.
Dr. Donald C. Balfour, Rochester, Minn.

The committee in charge requests that every member of the several associations arrange to attend this meeting.——The Montana Health Officers' Association will meet in the park at this time. Montana physicians desiring further information should communicate with the secretary of the state medical society, Box 88, Billings.

HAWAII

Plague Infected Rat Found.—A plague infected rat was found at Honokaa, Island of Hawaii, June 1. This is about 200 miles from Honolulu which is on the Island of Oahu. The last case of human plague on the Island of Hawaii occurred, February 16, at Kukuihaele.

PHILIPPINE ISLANDS

Proposed School of Hygiene and Public Health.—The war department has announced that the governor general of the Philippine Islands, Henry L. Stimson, is planning a campaign to improve the health of the Filipinos, and that an appropriation has been approved for the establishment of a school of hygiene and public health at the University of the Philippines, Manila. Mr. Stimson has conferred with Dr. Victor G. Heiser with reference to formulating a health program. Dr. Heiser, who is in Manila in the interest of the Rockefeller Foundation, has spent many years in health work in the islands. Public health remains one of the most difficult tasks of the government. The tuberculosis, malaria and beriberi problems are attributed by Dr. Heiser to an insufficient and improper diet. To balance the diet of these people properly there must first be, it is said, an economic development. The school of hygiene and public health will be established with a curriculum modeled on that of the best schools of the type in the United States to train the 400 officers of the Philippine Health Service and other physicians for the prevention of disease.

LATIN AMERICA

Yellow Fever in Brazil.—The outbreak of yellow fever at Rio de Janeiro, from June 1 to July 14, amounted to seventy-nine cases and twenty-nine deaths. Three cases each were reported also at Pernambuco, Sergipe and the interior town of Barai. To guard against the introduction of the disease into the United States, the U. S. Public Health Service has instructed quarantine officers in all ports south of Norfolk, Va., to be on the alert for cases.

Chile May Censor Advertisements of Drugs.—The bureau of sanitation of Chile has prepared a bill for the next session of the Chilean Congress which would restrict the manufacture and sale of pharmaceutic products to formulas which the bureau considers "constitute a scientific novelty, a medical progress or which satisfy a real therapeutic need." All specifics would be analyzed and registered prior to being entered in commerce, and the advertisements would require the approval of the government. The fees for registering articles now authorized to be sold would be fixed at 50 pesos for national, and 150 pesos for foreign products. There are eighteen articles in the bill. The U. S. Department of Commerce comments on the proposed legislation in special circular number 212—chemical division.

Deaths in Other Countries

Emilio Conde Flores, president of the Caracas Academy of Medicine and formerly general inspector of hospitals of the federal district, February 21, at Caracas, Venezuela.

Government Services

Army Personals

First Lieut. Stuart A. Cameron has been relieved from duty at Letterman General Hospital, San Francisco, and assigned to the army medical school for a course of instruction. Lieut. Col. David S. Fairchild, Jr., has been relieved from duty at New Haven, Conn., effective September 1, and assigned to Fort Hayes, Ohio. Major Frank W. Wilson has been relieved from duty at the general dispensary, Washington, D. C., and assigned to the Fitzsimons General Hospital, Denver. Lieut. Col. Harry S. Purnell is relieved from duty in the office of chief of the military bureau, Washington, D. C., effective September 15, and will proceed to Edgewood Arsenal, Maryland, for duty. Col. William N. Bispham is relieved from duty at Fort Sam Houston, Texas, and will report about September 1, to the chief of the military bureau for duty in his office. Lieut. Col. George H. Scott is relieved from duty as instructor, national guard, Philadelphia, effective September 1, and will proceed to Fort Sam Houston for duty. Capt. John M. Tamraz was relieved from duty at Fort Benning, Georgia, effective July 15, and will proceed to Fort Totten, New York, for duty. Major William W. Conger was relieved from duty at Balboa Heights, Canal Zone, effective on completion of his tour of foreign service and is then detailed as instructor, Connecticut National Guard, with station at New Haven. Lieut. Col. Ernest G. Bingham is relieved from duty at Jefferson Barracks and on relief from treatment at Walter Reed General Hospital will proceed to the city of San Francisco for duty. Major David D. Hogan is relieved from duty as instructor, Illinois National Guard, Chicago, and is assigned to Fort Bliss, Texas, for duty, effective November 15. Capt. Ebner H. Inmon is relieved from duty at Walter Reed General Hospital about August 31, and assigned to duty at Station Hospital, Fort Sam Houston, Texas; Capt. Inmon on completion of his temporary duty at Camp Custer, Michigan, will proceed to Rochester, Minn., for about four months to pursue a course of instruction at the Mayo Foundation. Lieut. Col. Charles L. Foster, Washington, D. C., will proceed to the army and navy general hospital, Hot Springs National Park, Ark., for observation and treatment. Capt. William L. Thompson is relieved from duty at Fort Monroe, Virginia, and assigned to the army medical school, Washington, D. C., for duty. Major James B. Montgomery, Fitzsimons General Hospital, Denver, and Capt. Philip P. Green, army and navy general hospital, Hot Springs National Park, Ark., will sail from San Francisco about September 21 for duty in the Hawaiian department. Capt. Edwin H. Roberts, Fort Sill, Oklahoma, and Capt. Emery E. Alling, William Beaumont General Hospital, El Paso, Texas, will sail from San Francisco about October 16, for duty in the Canal Zone. Capt. Edward J. Strickler on completion of his tour of foreign service in the Hawaiian department is assigned to duty at Fort Riley, Kansas, and Capt. Reginald F. Annis, on completion of his foreign service in the Panama Canal department, is assigned to duty at Fort McIntosh, Texas. Capt. Charles R. Bullock, on completion of his foreign service in the Panama Canal department, is assigned to duty at Fort Bliss, Texas. Major Paul E. McNabb, on completion of his foreign service in the Panama Canal department, is assigned to army medical school, Washington, D. C.

Examination for Entrance into Public Health Service

The U. S. Public Health Service will conduct examinations for commission as assistant surgeon in the regular corps, November 5, at Washington, D. C., Chicago, New Orleans and San Francisco. Candidates must be 23 and not over 32 years of age and graduates of a reputable medical college; they must have had one year of a hospital internship or two years in practice and must pass oral, written and clinical tests and undergo a physical examination before a board of officers. Requests for admission to take the examination should be addressed to the surgeon general, U. S. Public Health Service, Washington, D. C.

New U. S. Public Health Officers

The U. S. Public Health Service announces the appointment and commission as assistant surgeons in the regular corps of the following:

Dr. Hiram J. Bush, Jeanette, Pa.
Dr. Donald P. Ross, Salisbury, N. C.
Dr. Richard A. Steere, Sheridan, Wyo.
Dr. Aubrey E. Snowe, Gardiner, Me.
Dr. Samuel J. Hall, Louisville, Ky.
Dr. Harold F. Whalman, Oakland, Calif.
Dr. Eddie M. Gordon, Jr., Westwego, La.
Dr. Walter L. Barnes, Conway, N. C.
Dr. Milton A. Gilmore, Bradock, Pa.
Dr. Henry N. Fisher, St. Louis.
Dr. Ray C. Green, Santa Ana, Calif.
Dr. Huston G. Foster, Chicago.
Dr. Robert W. Cranston, Minneapolis.
Dr. Lee C. Watkins, New Orleans.
Dr. Edgar W. Norris, Jr., Omaha.
Dr. Robert G. Townsend, Lumberton, N. C.
Dr. Paul A. Neal, Jr., West Point, Tenn.
Dr. Addison C. Grimes, Nashville, Tenn.
Dr. Richard B. Holt, Nashville, Tenn.
Dr. William C. Brann, Village, Va.
Dr. Gilbert L. Dunnahoo, Hot Springs, Ark.
Dr. William C. Plumlee, Roy, N. M.

Veterans' Bureau Pathologists

Because of the inability of the veterans' bureau to obtain pathologists for some of its hospitals, a course in pathology was conducted at the army medical school and the U. S. Veterans' Bureau Diagnostic Center, Washington, D. C., to train men for this work. Twelve veterans' bureau physicians completed the course, June 30, consisting of 142 hours of work at the diagnostic center and 285 hours of work at the army medical school in subjects ranging from postmortem technic and tissue pathology to serology, basal metabolism, biologic chemistry and the preparation of autogenous vaccines.

U. S. Public Health Service

Surg. Clifford R. Eskey has been relieved from duty at Manila, P. I., and assigned to the New Orleans Quarantine Station, Louisiana. Surg. Robert W. Hart has been relieved from duty at San Francisco and assigned to Manila as chief quarantine officer. Surg. Francis H. McKeon has been relieved from duty at Port Townsend, Washington, and assigned to marine hospital, St. Louis, as medical officer in charge. Surg. Marion F. Haralson has been relieved from duty at Port Arthur, Texas, and assigned to Balboa Heights as chief quarantine officer of the Panama Canal, from which position Surg. John D. Long has been relieved and assigned to Washington, D. C. Surg. James R. Hurley has been relieved from duty in the Virgin Islands and assigned to El Paso, Texas, in charge of quarantine, immigration and marine hospital activities. Surg. Charles W. Vogel has been relieved from duty at Stuttgart, Germany, and assigned to Copenhagen, from which place Surg. Louis P. H. Bahrenburg has been relieved and assigned to Stuttgart. Surg. James G. Townsend has been relieved from duty at Little Rock, Ark., and assigned to the hygienic laboratory, Washington, D. C. Acting Asst. Surg. Frederick T. Foard has been relieved from duty at Charleston, W. Va., and assigned to Stockton, Calif., in connection with rural sanitation work. Surg. Holcombe M. Robertson has been relieved from duty at Washington, D. C., and assigned to the American Consulate, Glasgow, Scotland. Dr. Erval R. Coffey has been promoted to the grade of passed assistant surgeon in the regular corps. A number of assistant surgeons in the reserve corps were ordered to active duty, June 28, at various marine hospitals for training. Passed Asst. Surg. Leo W. Tucker has been relieved from duty at Honolulu and assigned to duty at New Orleans. Surg. William S. Bean, Jr., has been relieved from duty at Ellis Island, New York, and assigned to Mobile, Ala. Surg. Knox E. Miller has been assigned as officer-in-charge of the marine hospital at Evansville, Ind., and Surg. Carl Ramus has been relieved from Evansville and assigned to Ellis Island.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 23, 1928.

The Population Question

Mr. Anthony Ludovici has written a book against birth control, in which he argues plausibly that only by means of large families is heredity given "as many chances as are reasonably possible to achieve the best and happiest combination." He gives lists of great men who would not have been born if limitation to three or four children had been practiced by their parents. Commenting on this, a correspondent is the *Sunday Graphic* writes: "When all other arguments are exhausted, the brutal fact remains that the world is overpopulated, and overpopulation was not least of the causes (though, perhaps, least recognized) which precipitated the Great War. And uncontrolled birth rates will infallibly lead to further wars. Moreover, what matters the greatness of a few great men in a world which has been overcrowded with 'men-in-the street' in the effort to produce them? What meaning can even a Shakespeare have for swarming millions competing for elbow room in a planet which seems to contract under their feet, or what can a Newton signify to hungry generations treading generations down?"

Tetanus from Catgut

The Scottish board of health commissioned Dr. T. J. Mackie, professor of bacteriology at Edinburgh University, to inquire into a series of nine cases of postoperative tetanus and one of gas gangrene (all fatal except one) which occurred in a limited period in one institution. This series is probably unique in Great Britain. Professor Mackie was requested to report on the effectiveness of the means employed for sterilization of catgut, its storage, and the dangers of its use. The investigation has not only furnished important data in regard to the whole problem of postoperative tetanus but has also led to an extended study of prevention. The occurrence of this series within a limited period in one institution pointed to some common factor in the practice of the hospital. Suspicion as to the catgut was on theoretical grounds reasonable. The bacillus of tetanus is a commensal organism in the intestinal tract of herbivora, and sheep's intestine, from which it is prepared, is a potential source. Other anaerobic sporing bacilli—*Bacillus welchii, B. sporogenes* and *Vibrion septique* which may produce serious wound infection, such as gas gangrene, are also intestinal bacteria. Further, the raw material is obtained at abattoirs under conditions in which contamination with *B. tetani* may readily occur. Therefore in the manufacture of surgical catgut the elimination of all sporing bacteria has been aimed at. But *B. tetani* and allied organisms produce highly resistant spores capable of withstanding chemicals which destroy nonsporing organisms. In the sterilization of catgut the methods are restricted in view of the tendency of the material to deterioration for surgical purposes when subjected to the more rigorous methods of sterilization. Spores may also be particularly difficult to destroy by reason of their being embedded in the substance of the catgut string. Germicidal agents that would be efficacious in eliminating surface bacterial contamination are much less reliable when spores are protected by a "mantle of catgut." The tetanus cases consisted of six gynecologic operations (all repair operations except one—an oophorectomy and appendicectomy), one cholecystectomy, one nephrectomy and one gastro-enterostomy. The gas gangrene case was removal of an exostosis of the leg. The operators were ten different surgeons. Thus, most of the cases followed gynecologic operations, particularly

used directly from sealed tubes. In the others it was prepared for surgical use by processes which are described. In most of the cases the thicker gages of catgut were employed. In some, the material was used in "considerable" amount, though in others a relatively small quantity was left in the tissues. It is significant that after the particular supply of catgut was stopped no further cases occurred. Immediately prior to this, four cases of tetanus and one of gas gangrene were reported within six weeks. It is also noteworthy that in most of the cases examined bacteriologically other sporing anaerobic bacilli were found in the wound or operation area. It is conceivable that these organisms gained access to the wound along with *B. tetani* from the same source, though in the gynecologic repair operations they may have represented endogenous infections. In these cases the tissue in the area was necrotic or gangrenous. Primary sepsis was possibly a contributing factor in certain of the gynecologic cases.

Catgut was examined at various stages of its preparation for surgical purposes, and an extensive series of experiments in sterilization with various antiseptics was made. In a considerable proportion of specimens of dry catgut, sporing anaerobic bacteria were found, e. g., *B. welchii* and *B. bifermentans-sporogenes*, both organisms of intestinal origin that have been described in wound infections. *B. tetani* was found in one specimen of catgut after treatment by four bactericidal processes and storage in solution of red mercuric iodide with other antiseptics. In other similar specimens, *B. welchii* and *B. subtilis* were found. Among the various antiseptics tested, the most effective for destruction of sporing bacteria proved to be iodine in aqueous solution and hydrogen peroxide.

The report ends with the following recommendations: In the preparation of surgical catgut absolutely fresh, raw material as free as possible from bacterial contamination should be used, and any multiplication of the contaminating bacteria in the material must be avoided. The earliest possible destruction of organisms in the raw material should be aimed at; this can readily be effected after the intestine has been opened longitudinally and is in the form of the so-called ribbons prior to the spinning of strands. This may be best achieved without apparent damage to the material by immersing in 1 per cent aqueous solution of iodine. In the further preparation of the catgut, meticulous precautions should be taken to avoid subsequent extraneous contamination. Some degree of contamination is inevitable in the spinning and other manipulations, but this can be reduced to a minimum by a careful technic. Effective methods must be insured for the subsequent sterilization of the catgut strands prior to surgical use. After final sterilization the whole technic of storage and distribution must be that of perfect asepsis.

At present there is no control by any health authority over the manufacture of surgical catgut liable to carry dangerous bacterial spores and intended for introduction, sometimes in large quantity, into the tissues. The same control as that now exercised, under the Therapeutic Substances Act, by the ministry of health over the manufacture of vaccines, antiserums and certain other biologic products, should be applied to catgut; such control would assist and guide manufacturers of surgical catgut in standardizing their methods and safeguarding their products. Under the act referred to, rigorous sterility tests are demanded in the case of antiserums and vaccines. There is the same need for bacteriologic control tests of catgut supplied in sealed tubes and "guaranteed" to be sterile. When catgut is supplied in the form of dry strands, these should be free from sporing anaerobic bacilli of direct intestinal origin, e. g., *B. welchii*. Surgeons and others who undertake the responsibility of preparing these strands for operative use should insure that their methods of sterilization and technic of manipulation, storage and distribution are such as to yield a perfectly sterile product. Though, in the cases investigated, catgut may be regarded as the source of infection, the question of auto-infection as a possible causative factor requires further investigation. An inquiry into the prevalence of carriers of *B. tetani* and whether such carriers possess an effective immunity would be of great interest and practical importance. The various data elicited from this investigation of postoperative tetanus and the correlated study of the resistance of bacterial spores to bactericidal agents have been placed on record to supply evidence of the relationship of contaminated catgut to postoperative tetanus and other related infections, and to illustrate the difficulties of eliminating sporing organisms from catgut and the ineffectiveness of various methods in vogue. The results also demonstrate the necessity for effective standard methods applicable to the sterilization of catgut and a standard technic of preparation both in manufacture and in surgical practice.

PARIS

(From Our Regular Correspondent)

June 13, 1928.

The Congress of Medical Hygienists

The official medical hygienists have formed a syndicate, which held recently its first annual meeting at Dijon. There was an attendance of fifty. A number of resolutions were adopted and submitted to the minister of health. These resolutions will no doubt surprise the minister, since all the conventionists are officials subject to his orders. The question arose as to whether the health officers were going to create a small technical parliament or council, which would probably be an advantage for science and be for the public interest but would deprive the minister of much of his authority. Among the resolutions adopted by the congress, the following may be mentioned: The introduction of compulsory antidiphtherial vaccination with the Ramon anatoxin in all the schools; centralization of all the public and social health services in the hands of the minister of health instead of being scattered, as they are at present, among several ministries; the immediate and direct transmission of all the declarations of contagious diseases to the departmental inspectors of the health services, to the municipal directors of the bureaus of health, or, where these are lacking, to the physicians whose duty it is to receive news of epidemics, instead of the present centralization in the hands of the minister, which entails a great loss of time and unnecessary correspondence. The congress ended with a visit to the sanitary arrangements of the region about Dijon.

Vaccination in Algeria

Algeria sends to France a large number of native workmen. Smallpox is still widely prevalent among the Arabian population of Algeria, in spite of efforts that have been made to promote vaccination. Vaccination encounters some opposition among the Mussulman population, owing to tenacious prejudices. Another difficulty is that the population consists of innumerable small tribes spread over a vast range of territory and often leading a nomadic existence. It is almost impossible, even with mobile crews of vaccinators, to reach them all. Such Algerian workmen cause, from time to time, outbreaks of smallpox in France, in spite of the compulsory vaccination of the civil population, in the regions in which periodic revaccination is neglected. In accordance with a recent decision, all Algerian workmen presenting themselves at the ports of Algeria, bound for France, must submit to vaccination. This measure, however, does not appear to be sufficient, and the Academy of Medicine, at the suggestion of Dr. Camus, the director of its institute of vaccination, has recently requested the minister of the interior to require that natives vaccinated in ports of embarkation be kept under supervision for eight days in special quarters, in order that they may not embark until the vaccination has proved successful. However, considerable deception is practiced, since the natives often lend their identi-

fication papers to their friends, and the photograph is not always sufficient to expose the fraud, owing to the great resemblance that the natives bear to one another.

Pseudotuberculosis in Stone Cutters

It has long been generally held that stone cutters are particularly affected by pulmonary tuberculosis, especially those who break siliceous rock on the highways. The particles of silica have sharp and cutting edges. Inhaled with the dust, they cause minute injuries of the bronchial mucosa, which become easy points of entry for the tubercle bacillus. Cutters of calcareous stone are not exposed to the same danger, as the particles are less sharp and are partially soluble in the mucus. MM. Heim, Agasse-Lafont and Feil have recently made a special study of the question. They reached the conclusion that the morbidity and the mortality of these workmen is due almost exclusively to diseases of the respiratory tract but seldom to tuberculosis. The symptoms as revealed by the roentgenographic examination differ frequently from those provoked by tuberculosis, and the tubercle bacillus is ordinarily absent from the sputum of the patients.

The Noncontagiousness of Cancer

The notion of the contagiousness of cancer, which is unfortunately widespread among the general public, is based, according to Professor Regaud, director of the Cancer Institute of the University of Paris, on an inaccurate conception and on a false interpretation of the fact that cases of cancer are sometimes more prevalent in a given region. The reasons for this are still unknown, though it is evident that contagion does not play a part. Such increased incidence is due to the simultaneous presence of persons subjected to the same influences of milieu, of habitat, of collective habits, of trade or occupation, of family and of race, all of which circumstances may develop, in all, the same tendencies to cancer. It is true that cancer grafts have been obtained experimentally from animals and possibly from man. But a cancer graft, quite different from contagion, does not "take" unless a great many precautions are observed, and often fails. The autograft is of a different nature and represents a form of neoplastic metastasis; it proves merely the general sensitization of the subject to cancerous processes.

JAPAN

(From Our Regular Correspondent)

June 14, 1928.

Retirement of Baron Dr. Kitasato

Baron Dr. Kitasato, dean of the Keio Medical College and chief of the college hospital, has retired and is to be succeeded in the college by Dr. T. Kitashima. He is one of the founders of the college.

Blindness to Be Treated Free of Charge

In commemoration of the enthronement ceremony this fall, the Tokyo *Daily News* will begin the free treatment of any blind men. The number of blind men in this country amounts to 70,000, most of whom are without means to consult physicians and undergo treatment. Prof. Dr. Ishiwara of Tokyo will be the leader in this work.

Exchange Scholarship

The Rockefeller Foundation has arranged for several Japanese professors of medicine to go to America to pursue investigations; it contributed a large sum of money toward the reconstruction of the Tokyo Imperial University soon after the earthquate disaster; it plans to establish an organization for the public health in this country, and it has arranged for exchange of medical investigators between America and Japan. The committee for the exchange scholarship has decided to send this year Dr. M. Nishio, professor in the Jikeikai Medical College, and Dr. T. Matsuzaki, professor in the Imperial Girls' Medical College.

Dinner for Prof. Dr. Ishiwara

Prof. Dr. Ishiwara, who has been the professor of dentistry in the Medical Department of the Tokyo Imperial University for the last twenty years, has retired. In order to commemorate his long service, a dinner was given by his friends and followers at Ueno, Tokyo, April 28.

Doho Association of Japan Red Cross Nurses

Nearly 900 nurses have been trained in the Japan Red Cross Society since the foundation of the society in 1890, and through the efforts of Baron Hirayama, president of the society, they have established an association called the J. R. C. S. Nurses' Doho Association. The first general meeting was held in the Japan Red Cross Society Building in Tokyo, May 5, and Viscount Motono's mother was elected head of the association.

Japanese Nurse to Go to London

Miss N. Inoue, a nurse in the Osaka Chapter of the Japan Red Cross Society, is to be sent to London to attend a course of lectures under the auspices of the League of Nations. The course will continue for a year, beginning in August. Miss Inoue has been in the service of the society since 1911 and was graduated from Miss Tsuda's Girls' English College in Tokyo last March.

New Regulation Concerning Vaccination

The outbreaks of smallpox in Tokyo since last January, amounting to more than seventy cases, have been brought to an end. According to the results of an investigation the largest number of cases occurred in infants of from 1 to 10 years of age. It has been found that even those children who have been vaccinated twice in their lives are not perfectly immune even so long as ten years; therefore the health bureau of the home department will submit to the next legislature of the imperial diet the new regulation that a third vaccination shall be compulsory for children on their completion of the primary school course.

Children's Avenues in Tokyo

The children in Tokyo are in danger from playing in the streets, among moving cars or motors, and more than 2,500 victims were reported last year. The municipal authorities are making every effort to establish more parks for them but, as proper sites cannot easily be obtained, it is decided that 200 children's avenues shall be established in the city, wherein traffic is to be stopped in order to allow children to play from 1 to 5 p. m. after school every day.

Investigation of Suicide

The results of investigations of suicides which occurred in Tokyo and its neighborhood have been published by Prof. T. Oguma. The total number of cases is 520, males numbering 275 and females 245. According to the Japanese superstition there are two critical ages in life: for men this falls in the twenty-fifth and forty-second years, and for women in the nineteenth and thirty-third years. In reality there were few cases of suicide in the latter period among either men or women. There still prevails another superstition concerning an evil age, namely, that girls born in the year of "Elder-Fire Horse" (which comes around every sixty years) will make very bad wives that will destroy their husbands' lives, and this often leads girls to unnecessary self-destruction.

Personals

Dr. K. Noheji, a health official, was delegated to attend "the International Conference on Rats" held for a week beginning May 16. Dr. I. Kubo, professor in the Kyushu Imperial University, left Moji, May 26, to attend the first meeting of the International Otorhinolaryngologic Association, which is to be held in Denmark.

BUENOS AIRES

(From Our Regular Correspondent)

May 28, 1928.

Pneumonic Plague

The master of a boat became sick and died in Uruguay, with a diagnosis of bronchopneumonia; when the boat reached Buenos Aires, three sailors became sick, and it was found that they had pneumonic plague. Another sailor, who left the boat, and a woman, who took care of the three patients, also died. This focus of pneumonic plague caused great alarm here. A sanitary guard was established, men living near the focus were examined, the focus was disinfected, and rats were killed. There were no more cases.

Dr. F. Destéfano, professor of infectious diseases, published a letter criticizing as inefficient the measures taken. The municipal authorities resented this criticism and discharged Dr. Destéfano from his post as chief of ward of the Hospital of Infectious Diseases and from his post as technical director of the Muñiz Hospital. This measure has led to many protests among physicians.

University Government

The participation of students in the government of the faculties has led to serious results: First, corruption among students, as it offers them positions or facilitates their practical work or examinations; second, multiplication of examinations (there is one every three months) with detriment to school activities; third, disorders and conflicts every year. In one school a student, because of his being a graduate from another school, was elected member of the council, and as such presided in the board of examiners. In another school of one university there was a student who on one occasion had not passed the subject on which he was examiner. Fortunately the harm has not gone far, but it threatens to increase or to become permanent.

Buenos Aires Hospitals

The Public Assistance has appropriated 2,000,000 pesos (about $800,000) for the enlargement of the Alvear Hospital, and 400,000 pesos (about $160,000) for the Durand Hospital. It has been planned to build a hospital for tuberculous patients in Rodríguez (Buenos Aires province) which will cost 1,000,000 pesos (about $400,000).

Meeting of the Northern Regional Pathologic Society

The Argentina Northern Regional Pathologic Society held its session in Santiago, May 7-9. There were five meetings. In the first, Nicolle and Anderson read papers on spirochetes and sheep-ticks; E. Sergent, on the existence of five hematozoa in bovine piroplasmosis; Franchini, on leprous lesions one and a half years after inoculation of a monkey; E. E. Rickard (from the Rockefeller Foundation, Tucumán mission, Argentina), on the need of antilarval measures and the inefficiency of quinine alone for the prophylaxis and cure of malaria, in order to diminish its frequency.

Among the speakers in the second meeting were: Dusseldorp on conjunctival plasmocytoma; Niño on Chagas' trypanosomiasis; Ferrer on paresis; Quiroga on the mutation of Löffler's bacillus; Molinelli on the speed of red cells sedimentation in leprosy; Plate and Borzacow on medical meteorology.

During the third meeting papers were read by Marques da Cunha and J. Muñiz on *Euthricomastix* in the bowel of the rabbit and on *Ameba hartmanni;* by Escomel on amebic tumor of the cecum; by Vogelsang and Tálice on *Balantidium coli;* by Rodríguez Cubilo on accidents due to *Latrodectus mactans;* by H. Folquer on a fatal case of arachnoidism in a baby; and by Cordero, Vogelsang, Goyena, Andrada and Loizaga on intestinal protozoa.

The fourth meeting was devoted to malaria. R. E. Rickard described the flying range of *Anopheles pseudo-punctipennis* (up to 3.8 miles), almost the only vector of malaria in the northern part of Argentina; Floriani spoke on *Aspidosperma quirandi;* Cossio on malarial hives; Canal Feijoo on the cardiovascular system in patients with malaria; Cossio and Albarracín on the increased sedimentation rate of red cells in patients with malaria.

The fifth and last meeting was devoted to parasitologic subjects. MacDonag spoke on distoma; Vogelsang on ticks; Mazza and Frank on microfilarias in fowls; Vogelsang and Cordero on *Platinosoma* in fowls; de Mazza on filariasis in fowls; de Cordero and Vogelsang on bugs in fowls; de Parodi on subcutaneous cysticercosis.

Dr. S. Mazza should be credited with the support, preparation and organization of this session. The next session will be held in October, 1929, at Jujuy.

ITALY

(From Our Regular Correspondent)

May 15, 1928

Fluorosis and Fluoric Cachexia

Before the Associazione Medica of Trieste, Professor Cristiani presented recently a communication on fluorosis. The author pointed out that chronic intoxication with fluorine is a new disease, for it is only a few years since the soluble salts of fluorine first began to be used as a food preservative, and still more recently that fluorine began to be employed more widely in the industries. In Switzerland, in the environs of an aluminum factory, from which large quantities of fluorine vapors were thrown off, there developed a disease among the cattle, from which 150 died. As the owners of the factory refused to admit that their plant had anything to do with the death of the cattle, Professor Cristiani was engaged to study the problem. He demonstrated that, whereas a normal guinea-pig lives from five to six years, those fed with forage treated with fluorine vapors die in from three to six months from chronic intoxication and fluoric cachexia. Fluorine is at present employed in several countries for the manufacture of insect powders and for the conservation of butter, wines, sirups and milk. The use of fluorine in milk is especially dangerous, since the feeding of milk impregnated with fluorine causes in children a fluorosis that is fatal.

The Death of Prof. Giovanni Memmo

Prof. Giovanni Memmo, *generale medico* in the army medical corps, has died at the age of 56. He carried out important researches on the problems of alimentation, the resistance and virulence of *Bacterium coli,* rabies, diphtheria and malaria. In 1903, he was called to Eritrea in northeast Africa as the head of a scientific mission for the study of the cattle plague, and succeeded in effecting a considerable decrease in the mortality of cattle. During the Italo-Turkish War he applied, for the first time, prophylactic typhoid vaccination to the Italian military forces.

A Chair of Industrial Medicine

The Faculty of Medicine and Surgery of the University of Naples has decided to create a chair of industrial medicine (*medicina del lavoro*). The instruction will include occupational diseases, but the field of study will be extended so as to consider also the life of the workman during the hours that he is off duty. The first occupant of the chair will be Prof. Nicolò Castellino, who has been for some time in charge of the instruction in occupational diseases at the university.

High Birth and Low Mortality Records

For 1927, the lowest mortality rate recorded in Italy is that reported by the commune of Zoppola in Friuli, which was 7.5 per thousand inhabitants. The highest birth rate for 1927 was recorded in San Bellino, in the province of Rovigo, the rate being 41.74 per thousand inhabitants, in contrast with a mortality of 11.5 per thousand.

A Course in Phthisiology

For the purpose of developing a nucleus of physicians with special training in tuberculosis insurance, in view of the imminence of the application of the new law pertaining to compulsory insurance against tuberculosis, a course on diseases of the respiratory apparatus, with special reference to medical jurisprudence and to insurance regulations, will be organized in Rome. The technical management of the course has been assigned to Prof. Eugenio Morelli. The course will cover a period of six months, and will be divided into a theoretical and a practical section. The latter will be given in the Sanatorio Cesare Battisti, the dispensaries of the Red Cross Society, and the various departments of the hospitals in Rome.

The Congresses of Sexology and Dermosyphilography

The fifth Congress of the Society of Sexology, Dermography and Eugenics and the fourteenth session of the Associazione professionale dei dermosifilografici italiani are to be held in Roncegno (Val Sugana). The following topics will be developed: heredity, with papers by Profs. Baglioni, Monaldi, Ficcardi and Verrotti; the dermosyphilographer in relation to maternal and infant welfare, by Prof. M. Artom; protection of the wife in the sexual life, by Baglioni, Sberna and others. The meeting of the Associazione ultravioletta italiana will be held in Roncegno, at the same time. The honorary president will be Professor Viola, director of the Clinica Medica in Bologna.

Convention of Medical Syndicates

Under the chairmanship of Dr. Arnaldi Fioretti, a convention of the provincial secretaries of the Italian medical syndicates was held in Rome. Dr. Fioretti explained to the colleagues present the purpose of the convention, which was to discuss certain live topics closely connected with the interests of the medical profession. He stated that the new regulation of the insurance law, which pertained to tuberculosis, had been approved. The insurance against tuberculosis will be compulsory for all persons with an income of less than 800 liras ($42) a month. The question is now being considered as to whether or not this form of compulsory insurance should be extended to all diseases. Thus far, the medical profession has opposed such a general application; however, the medical profession is not properly represented on the commission appointed by the government to study the proposed legislation.

Another problem awaiting solution is the present plethora of physicians in Italy. To combat it, two methods have been proposed: either to close the register of physicians and leave it closed as long as there are no available posts, or limit the number of medical students enrolled at the universities by the application of severe methods of selection. The recent introduction of the state examination for the newly graduated students has not produced, from this point of view, the results that were expected.

Finally, there is the question of providing a home for superannuated physicians.

After a discussion in which the representatives of the various provinces participated, the following four resolutions were approved:

1. The physicians of Italy accept, as a discipline, the principle of insurance against disease, although certain that such provision will bring damage to their profession. They request, however, that a representative of their body be appointed on the government commission.

2. The physicians hold that the state should limit its task to supplying a minimum of sanitary and financial assistance to the insured, without creating a special insurance organization but entrusting rather the functioning of the new system to the existing mutual health insurance societies.

3. The sanitary assistance should be supplied in such a manner as to leave to the insured the free choice of a physician. The payment of charges should be made either on the basis of bills or on the basis of service contracts between the mutual societies and the physicians.

4. The convention holds that it is urgently necessary to relieve the situation in the medical profession by limiting the number admitted to practice, while leaving open the enrolment at the universities.

BUCHAREST

(From Our Regular Correspondent)

June 12, 1928.

Tuberculosis and the Organs of Hearing

At the recent meeting of the medical society, Dr. Olteanu said that tuberculosis of the organs of hearing usually occurs as suppuration of the middle ear. The process is usually secondary, or it may accompany tuberculosis of the bone and lungs, especially in children. Tuberculosis causes a slight percentage of all ear diseases. The path of infection may be either from the mouth through the eustachian tube through an already present perforation of the tympanum from the external auditory meatus, or, finally, by way of the blood. Demonstration of the presence of the tubercule bacillus is often difficult and in some cases impossible. The clinical picture is variable. A characteristic sign is the absence of pain. The discharge is copious, thin and foul smelling. The process extends to the petrous bone and the labyrinth, and ultimately caries of the petrous bone and impairment of hearing result. It leads to facial paralysis and to erosion of the blood vessels. Severe complications, such as meningitis, thrombophlebitis and cerebral or cerebellar abscesses, may follow tuberculosis. Milder cases are encountered, especially in children. The prognosis is always unfavorable. Even when healing takes place, defects of the tympanum and impairment of hearing remain. The deeper the caries of the petrous bone extends, the graver is the prognosis; nevertheless by operation some relief may be afforded. Treatment may be local or general. Good air and good nourishment are advisable in addition to the local treatment. By conservative measures free drainage of the pus must be secured. The best results, however, are to be obtained by operative measures, by which all the middle ear cavities are made into one cavity and all carious bone is removed. The operation is indicated in every case of tuberculosis of the middle ear in which pulmonary tuberculosis has not yet made much progress.

Instruction in Hygiene

At a recent meeting of the medical officers of health of the country, the president in his opening speech said that, if it is desired to educate the public away from certain hygienically deplorable habits, potentially harmful to the individual and inimical to the public health, it is important to start with the young. For instance, children should be taught to abhor spitting on the street, or on the floor of the school wards, or on the carpets of their own homes. Personal cleanliness should always be given a foremost place in the training of the young, for not only do they directly profit thereby, but the example which they set is calculated to be followed by their elders. Children should be taught that washing the hands before meals is a necessity. It is well to impress on their minds the possible harm of smoking and drinking. Among the poor population of cities it is not an infrequent sight to see children under 10 indulging in smoking.

Severe Poisoning After Injections of Mercuric Salicylate

At the dermatologic society, Dr. Goldenberg reported a case of severe poisoning after injections of mercuric salicylate. A woman, aged 41, having undoubted syphilis, had received three injections of solution of mercuric salicylate at intervals of about five days. As a precaution the surgeon had injected at first only 0.05 Gm. and afterward 0.1 Gm., the usual dose. As diarrhea supervened, no further injections were given and

opium was administered. Three weeks after the injections, a typical mercurial rash appeared. The patient was then sent into a hospital. The exanthem healed with exfoliation of large scales. The diarrhea ceased after enemas of starch and a preparation of tannic acid. The urine showed 0.5 per cent albumin. About three weeks later a large piece of necrotic tissue was expelled from the anus. The evacuation of such mucous surfaces continued for two days. The patient died on the thirtieth day following the first injection. This must have been a case of idiosyncrasy to mercury.

Dermoid of the Bladder

Dr. I. Sazuroff of Bulgaria reports the case of a woman, aged 43, who was admitted to the hospital complaining of pain during micturition. She stated that she had been ill for several years and that she had been constantly treated for catarrh of the bladder without success. Examination revealed nothing abnormal externally except that the urinary meatus was slightly swollen. The bladder was finally explored. A pear-shaped tumor was found on the floor of the bladder, growing from a slender stalk. The tumor was covered with hairs, and small calculi were seated on the ends of these. The tumor was removed and the bladder carefully washed out after each catheterization. The patient was quite well by the tenth day. The tumor proved to be a true dermoid with skin, hair and teeth.

AUSTRALIA

(From Our Regular Correspondent)

June 18, 1928.

Diphtheria Toxin-Antitoxin Fatalities: Report of Royal Commission

The report of the royal commission that investigated the twelve fatalities that occurred at Bundaberg, Queensland, last January, subsequent to the injection of diphtheria toxin-antitoxin, was presented to the parliament of the commonwealth of Australia, June 13. The commission found that the toxin-antitoxin prepared by the commonwealth serum laboratories was properly prepared and sterile, but the mixture did not contain an antiseptic and therefore did not prevent the growth of micro-organisms accidentally introduced into it. The mixture was distributed in a rubber-capped bottle, the cap having a thin diaphragm which was designed to facilitate the withdrawal of small quantities of the contents at different times. Cultural examination of the remains of the bottle of mixture, which resulted in the deaths of twelve children, and the illness of several, resulted in the isolation of a staphylococcus. The mixture on examination was turbid and also contained a yeast, which the commission failed to grow. An identical staphylococcus was isolated from the abscesses at the site of inoculation of the surviving children. It was found that this "Bundaberg staphylococcus" had only a slight pathogenicity for guinea-pigs, mice and monkeys. In rabbits, however, intravenous injections in relatively small doses gave rise, in some instances, to death in from twelve to twenty-four hours with convulsions, but without gross lesions at necropsy. In the animals that survived longer, gross suppurative kidney lesions were invariably found.

The commission came to the conclusion that the deaths of the inoculated children were due to living staphylococci. This conclusion, it states, is based on entirely negative evidence, other possible causes having been excluded. The contamination took place during the withdrawal from the rubber-capped bottle, during the course of a previous series of injections. The accidentally introduced organisms were incubating for at least three days in a warm climate before being injected into the twenty-one children, twelve of whom subsequently died. All the children inoculated that day from that bottle of mixture either died or developed local abscesses.

The commission considered that it was an unsound procedure to issue, without any added antiseptic, toxin-antitoxin mixture in rubber-capped bottles suitable for repeated usage. The omission of the antiseptic was intended to act as a safeguard against the dissociation of the toxin-antitoxin mixture as a result of freezing. The commission recommended that any biologic products that do not contain an antiseptic should not be issued in rubber-capped bottles for repeated use. A warning notice on every container and package should be to the effect that all the contents must be used immediately or any remaining contents discarded. It was also recommended that all biologic products be distributed in ampules or bottles of clear glass in order to facilitate the detection of any turbidity or other defect. The commission recommended also that the advisability of substituting anatoxin or some similar modified immunizing agent for toxin-antitoxin be investigated by the commonwealth department of health.

The royal commission was composed of Dr. C. H. Kellaway, director of the Walter and Eliza Hall Institute for Medical Research, Melbourne, as president, Prof. Peter MacCallum, professor of pathology, University of Melbourne, and Dr. A. H. Tebbutt of Sydney.

BUDAPEST

(From Our Regular Correspondent)

June 27, 1928.

The Question of Infection with Syphilis from Dead Bodies

In a recent lecture, Dr. Joseph Guszmann, lecturer to the University of Budapest, discussed the possibility of syphilis being contracted by those handling the tissues of deceased persons who have had syphilis. Until recently the general belief was that the infecting agent of syphilis is connected only with living tissues, and that it quickly perishes in the cadaver. This view, however, has now been shaken. Although now and then instances were made public of syphilitic infections presumably having taken place as the result of postmortem examinations, proofs of the mode of infection were wanting. Decisive proofs were obtained only from investigations which sought to discover how long the spirochetes could remain in the dead body in a living state, and how long they could retain their virulence. Koch, Gastou, Buschke and Neisser found that, in infants suffering from congenital syphilis, spirochetes can be demonstrated to be present from one to five days following death. Jahnel demonstrated the presence of spirochetes in the brains of persons dead of paralysis, and Truffi found them in the dead body of a man with recent syphilitic infection. Although living spirochetes are not equally virulent, recent investigations have borne out the fact that spirochetes may remain virulent in a corpse. Koch successfully inoculated a rabbit with the inner organs of an infant who had died three days previously of congenital syphilis. The systematic investigations of Strempell and Zurhelle also proved that, given favorable circumstances, positive transference might be made from a syphilitic cadaver to rabbits within ninety-six hours. Of course, in all these inoculation experiments it has been a question of mass infection, while the occasional unintentional infection of a man is a much less likely matter. The fact that the number of instances of human infection from corpses is relatively very small seems to corroborate the view of those who deny that spirochetes in a corpse can be virulent after the lapse of twenty-four hours. According to Mgaloblischwili, twenty cases have been recorded which admit of no doubt. Probably spirochetes lose their virulence easily in the dead parts, very likely owing to the action of putrefactive agents. On the other hand, it is also probable that cases of this kind of finger infection in pathologists have been attributed to some other cause. Mgaloblischwili states that in the verified cases of such infection their primary syphilitic nature was not at first recognized in a single instance, and the infection was attributed either to paronychia or to tuber-

culosis. Also certain physicians keep their misadventure secret, for obvious reasons. At any rate, the possibility of an infection with syphilis taking place through the performance of a post-mortem examination is an established fact. Accordingly, syphilis must now be included among the diseases with which pathologists and their employees may become infected in the course of their professional duties.

BERLIN

(From Our Regular Correspondent)

June 16, 1928.

The Patient's Right of Privileged Communication with His Physician

The attitude of the criminologist Oberreichsanwalt Dr. Ebermayer on the patient's right of privileged communication with his physician has been expressed by him in part as follows:

The confidence of the patient in the physician is based chiefly on the assumption that the physician will keep secret all that the patient tells him concerning his state of health or that he himself observes in treating the patient, and that, without the consent of the patient, he will reveal to no one any facts imparted or observed. Absolute secrecy becomes, therefore, the professional duty of the physician. This duty is recognized by the law and its fulfilment demanded. The matter would be simple if one could adopt as a principle: "The physician may not reveal under any circumstances private secrets entrusted to him by a patient unless the patient consents to such revelation (that he may reveal such matters with the consent of the patient goes without saying)." Such a principle cannot, however, be set up, and the law recognizes that fact, in that it prohibits only the unauthorized revelation. That is where the difficulties begin. When is the revelation unauthorized? It is not unauthorized, as already stated, if the patient consents to the revelation. Furthermore, it is not unauthorized if legal provisions force the physician to make a revelation; for instance, the law compels him to report all cases of infectious diseases to a central authority (compare also the more recent legal enactment in regard to the declaration of cases of venereal disease). But, going even further, the courts recognize that the physician's duty to preserve silence is limited by higher moral or judicial, public or private interests, which may be more important than the patient's interest in the preservation of secrecy and which it may be impossible to conserve without the revelation of the patient's secrets. The question whether or not higher interests are involved is, in the individual case, difficult not only for the physician but also for the judge to decide.

Marked Retrogression of Venereal Diseases in Germany

During the period from Nov. 15 to Dec. 14, 1927, an enumeration of the persons throughout the whole *reich* that were affected with venereal disease was made. The enumeration included all cases of recent gonorrhea, untreated chronic gonorrhea, gonorrheal ophthalmia, chancroid, syphilis of the first and second stage, and congenital syphilis. The Prussian Bureau of Statistics has now published a preliminary report of the results of the enumeration. There is a total of 19,133 venereal subjects (13,179 males and 5,954 females) in Prussia. That amounts to an annual morbidity of 6.0 per thousand population (8.5 males and 3.6 females). The province of Westphalia has the lowest percentage (3.9 per thousand population). This very pleasing result is without doubt due, in part, to the energetic and systematic crusade against venereal disease, including the care of venereal patients, that has been carried on for many years in Westphalia by the *Landesversicherungsanstalt* (the provincial insurance bureau). The provinces next in order were: Upper Silesia, 4.3; Hanover, 4.6; East Prussia, 4.7; Rhine Province, 5.0; Brandenburg and Saxony, 6.3. Whereas for the enumeration in 1919 only about 50 per cent of the physicians sent in reports, in 1927 the cooperation was much better, reports having been received from 90 per cent of the general practitioners, from 95 per cent of the specialists, and from 96 per cent of the hospitals. One of the worst records came in from Berlin, with 13.6 per thousand population (20.4 males and 6.8 females), which, as the metropolis, is in a class by itself. Next to Berlin stands Schleswig-Holstein with 7.4 per thousand population, in which connection it should be taken into account that the response from the physicians of Schleswig-Holstein was not good and that the morbidity is doubtless higher than the report would indicate. The cause lies doubtless, in the main, in the shifting population of seamen. This is indicated by the fact that Kiel, though only 60 per cent of the physicians turned in reports, presented the worst record of all the large cities of Prussia (16.4). Three fourths of all the cases enumerated are referred to gonorrhea, a little under one fourth to syphilis, while chancroid, with only from 2 to 3 per cent of the total number, has retrogressed very materially. In the report, it is emphasized that, gratifying as the result is, as a whole, all talk of the disappearance of syphilis is premature, for there are still around 30,000 new cases annually, in Prussia. The federal bureau of statistics will publish soon comparative figures of the complete reports from all the states.

Modes of Combating Trypanosomiasis

When, in the region formerly known as German East Africa, trypanosomiasis was waging havoc among the native population, the German government sent Dr. Robert Koch out to organize a systematic campaign to check the progress of the disease. By instituting the destruction of the tsetse fly, which harbors the causative agent of the disease and transmits it to man, he succeeded in reducing the epidemic. During the war, however, the disease reappeared with an even wider incidence than before. Prof. F. K. Kleine, who had been a member of the Koch expedition, and who, since the war, under commission of the British and Belgian governments, has tested on trypanosomiasis patients, with the best of success, the action of "Bayer 205," the remedy introduced by the J. G. Farbenindustrie, was able, through the mediation of Madsen of Copenhagen, the president of the health section of the League of Nations, to participate in an official capacity in the trypanosomiasis expedition organized by the League of Nations. At the recent session of the Berliner medizinische Gesellschaft, he gave an account of the expedition, which, it seems, began its investigations in Entebbe (on Lake Victoria), the capital of the British Protectorate of Uganda, and then transferred its activities to Ikoma and Boma, from which towns Kleine made further excursions by motor boat and automobile in the search for foci or centers of the epidemic. Kleine regards the two supposedly different causative agents—*Trypanosoma gambiense* and *Trypanosoma rhodesiense*—as identical. In number 11 of the *Deutsche medizinische Wochenschrift*, Kleine has an article giving further details of the expedition. He was unable to discover any immunity in man. As the fight against the fly has now become impossible, the treatment must be confined to man himself. One great difficulty lies in the fact that the patients return to their villages as soon as their condition has improved a little. For that reason, Kleine is unable to give much information on the final outcome of therapeutic trials. The commission had taken along various medicaments to try them out. Kleine subjected them all to a careful test, and reached the conclusion that Bayer 205 must constitute the fundamental treatment. In cases in which it does not cure, it sterilizes, at least, the blood in the peripheral vessels and thus eliminates these patients as a source of infection. However, the majority of patients are cured by Bayer 205. If the patients come early for treatment and do not evade later supervision, it is a reasonable assumption that the epidemic will soon be stamped out. This goal, of course, cannot be reached without thorough organization. Numerous photographs and a film gave the audience a magnificent idea of the steppes of eastern Africa.

Marriages

RALPH SHANNON, Wilkes-Barre, Pa., to Miss D. Grace Vaughn of Berwick, at Philadelphia, July 15.

HENRY MADISON TOLLESON, Atlanta, Ga., to Miss Mary Beth Mortimer of Lake City, Fla., recently.

PAUL ELLIS PRILLAMAN, Beckley, W. Va., to Miss Sally Doriot Haller of Wytheville, Va., June 11.

GEORGE COLBERT TYLER, Newport News, Va., to Miss Hilda Margaret Lankford, of Morattico, June 20.

JAMES REGINALD BAILEY, Keysville, Va., to Miss Marguerite Stephenson of Littleton, June 23.

GEORGE WASKO SURGENT, Charlottesville, Va., to Miss Ida May Hicks of Crozet, Va., June 16.

PETER BOOTHE PULMAN, Alexandria, Va., to Miss Carolyn Burgess of Reva, June 23.

JAMES M. SPENCER to Miss Nellie Tickle, both of Roanoke, Va., June 18.

Deaths

Lucius Duncan Bulkley ✠ New York; Medical Department of Columbia College, New York, 1869; chairman of the Section on Dermatology and Syphilology, 1887-1892, the Section on Dermatology and Syphilography, 1895-1896, and the Section on Cutaneous Medicine and Surgery, 1899-1900, of the American Medical Association; past president of the New York Academy of Medicine and of the New York Dermatological Society; one of the founders of the New York Skin and Cancer Hospital; formerly on the staffs of the Randall's Hospital, the Manhattan Eye and Ear Hospital and the New York Society for the Relief of the Ruptured and Crippled; aged 83; died, July 20, at the home of his daughter in Englewood, N. J.

Flemming Carrow, Traverse City, Mich.; Medical Department of Columbian University, Washington, 1874; member of the Michigan State Medical Society; professor of ophthalmology, University of Michigan Medical School, Ann Arbor, 1887-1904; formerly member of the Michigan State Board of Registration in Medicine; at one time on the staff of the Harper Hospital, Detroit; aged 73; died, June 23, of myocarditis, arteriosclerosis and nephritis.

Corydon Goodrich Snow ✠ Major, U. S. Army, retired, Los Angeles; Medical Department of the University of Illinois, Chicago, 1904; entered the regular army as a first lieutenant in 1909; served during the World War; retired as a major in 1922 on account of disability in line of duty; aged 44; died, June 23, of chronic pulmonary tuberculosis and retroperitoneal sarcoma.

Joseph Fife Messenbaugh ✠ Oklahoma City; Missouri Medical College, St. Louis, 1898; at one time assistant professor of medicine, University of Oklahoma School of Medicine; formerly county coroner and mayor of Oklahoma City; aged 54; on the staff of St. Anthony's Hospital, where he died, June 19, of chronic peritonitis.

Clyde Butler Griffin, Anderson, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1921; member of the South Carolina Medical Association; on the staff of the Anderson County Hospital; aged 40; was killed, July 1, when the automobile in which he was driving overturned.

Maurice James Cross ✠ Grand Rapids, Mich.; Baltimore Medical College, 1907; served during the World War; formerly mayor and president of the school board; aged 50; on the staff of the Michigan Soldiers' Home Hospital, where he died, June 30, of heart disease.

Antonio F. Elie, Island Pond, Vt.; University of Montreal Faculty of Medicine, Montreal, Que., Canada, 1886; member of the Vermont State Medical Society; aged 68; died, March 24, at the Hospital General St. Vincent de Paul, Sherbrooke, Que., of heart disease.

Walter Scott Tyson ✠ Wichita Falls, Texas; Fort Worth School of Medicine, Medical Department of Texas Christian University, 1917; on the staff of the Wichita General Hospital; aged 44; died, June 29, of chronic gallbladder disease and paralytic illeus.

Armenag B. Tashjean, Norfolk, Neb.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1884; Rush Medical College, Chicago, 1895; member of the Nebraska State Medical Association; aged 70; died, May 27, of cerebral hemorrhage.

Albert H. Sturtevant ✠ Augusta, Maine; Medical School of Maine, Portland, 1899; chairman of the Maine Board of Registration of Medicine; on the staff of the Augusta General Hospital; aged 57; died, June 20, of cerebral hemorrhage.

Frank H. Achatz, Chicago; Chicago College of Medicine and Surgery, 1914; member of the Illinois State Medical Society; aged 54; died, July 8, of septicemia, as the result of a scratch on his arm received in a fall on the sidewalk.

Edwin Vivien Brendon, New York; Medical Department of the University of the City of New York, 1886; formerly on the staffs of the Gouverneur and Bellevue hospitals; aged 67; died, June 30, of arteriosclerosis and acute myocarditis.

Robert Jackson, Osceola Mills, Pa.; Jefferson Medical College of Philadelphia, 1896; member of the Medical Society of the State of Pennsylvania; aged 56; died, June 24, at the Clearfield (Pa.) Hospital, of gangrenous appendicitis.

William H. Carruthers, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1900; member of the Missouri State Medical Association; aged 57; died, April 22, of malignant hypernephroma with metastases in the liver.

Robert Arthur Alexander, Grimsby, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1871; aged 82; died, January 17, at the Hamilton (Ont.) General Hospital, of uremia, following a prostatic operation.

James Morgan Miller ✠ San Antonio, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1901; Jefferson Medical College of Philadelphia, 1902; aged 54; died, May 31, of myocarditis.

Ralph Beedle Scott, Venice, Ill.; Beaumont Hospital Medical College, St. Louis, 1898; member of the school board and president of the Venice State Bank; aged 63; died suddenly, June 9, of heart disease.

Matthew F. Bozinch ✠ Chicago; University of Moscow, Russia, 1890; Chicago College of Medicine and Surgery, 1912; aged 63; died, July 11, of thrombosis of the coronary artery and angina pectoris.

William Samuel Harwell, Frankewing, Tenn.; Vanderbilt University School of Medicine, Nashville, 1901; member of the Tennessee State Medical Association; aged 52; died in May, of cerebral hemorrhage.

James Plummer Fitch, Morgantown, W. Va.; Bellevue Hospital Medical College, New York, 1882; formerly member of the school board and city council; aged 73; died, June 5, of pneumonia.

Jefferson Martin Burks, Dale, Texas; Memphis (Tenn.) Hospital Medical College, 1910; member of the State Medical Association of Texas; aged 52; died, May 25, of carcinoma of the stomach.

Frank C. Zoll ✠ McIntosh, Fla.; Barnes Medical College, St. Louis, 1893; aged 57; died, June 16, at the Monroe Memorial Hospital, Ocala, of septicemia, following an infection of the thumb.

Thomas C. Malone, Milwaukee; Rush Medical College, Chicago, 1877; member of the State Medical Society of Wisconsin; aged 76; died suddenly, July 4, of cerebral hemorrhage.

William Chapman Lynch, Birmingham, Ala.; Louisville (Ky.) Medical College, 1883; aged 68; died, recently, in St. Vincent's Hospital, of acute pancreatitis and general peritonitis.

William S. Cain, Elmira, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1902; aged 50; died, June 12, of coronary thrombosis and dilatation of the heart.

John Thomas Boykin, Tampa, Fla.; Atlanta Medical College, 1890; served during the World War; aged 49; died, June 21, of cerebral hemorrhage and interstitial nephritis.

Orie Oden Bennett ✠ Crawford, W. Va.; Barnes Medical College, St. Louis, 1897; on the staff of St. Joseph's Hospital, Buckhannon; aged 56; died, March 20, of heart disease.

Milton F. Rayner, Belzoni, Miss.; University of Nashville (Tenn.) Medical Department, 1906; aged 46; died, June 12, at the King's Daughters' Hospital, Greenville, of erysipelas.

William McKenzie ✠ Conshohocken, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1871; aged 86; died, June 9, of arteriosclerosis and chronic myocarditis.

Hiram Bradford Mann ✠ Denver; University of Tennessee College of Medicine, Memphis, 1913; served during the World War; aged 39; died, June 4, of pulmonary tuberculosis.

William Sherman Lasater, Aledo, Texas; University of Tennessee College of Medicine, Memphis, 1893; served during the World War; aged 63; died, May 30, of nephritis.

Abraham Bertolet Rosenberry ✠ Wausau, Wis.; Rush Medical College, Chicago, 1883; on the staff of St. Mary's Hospital; aged 74; died, July 5, of angina pectoris.

Edgar B. Smoke, Winchester, Va.; Medical College of Virginia, Richmond, 1868; member of the Medical Society of Virginia; aged 80; died, June 8, of acute nephritis.

William E. Johnson, Belle, Mo.; Barnes Medical College, St. Louis, 1901; member of the Missouri State Medical Association; aged 54; died, March 16, of tuberculosis.

Robert A. Leith, Irving, Kan.; Medical Department of the University of the City of New York, 1894; aged 62; died, March 24, at Pasadena, Calif., of heart disease.

John Perry Kelly ✠ Golden, Colo.; University of Michigan Medical School, Ann Arbor, 1881; formerly county health officer; aged 69; died, June 10, of jaundice.

Abraham Lincoln Cross, Swanton, Vt.; University of Vermont College of Medicine, Burlington, 1891; aged 60; died, May 5, at Burlington, of thrombosis.

Martin Orrin Peters, Scandia, Kan.; Kansas City (Mo.) Hahnemann Medical College, 1909; aged 54; died, February 11, of chronic nephritis and myocarditis.

William Francis Kahl, Detroit; Detroit College of Medicine and Surgery, 1907; aged 45; died, June 19, of hemorrhage following a perforated gastric ulcer.

James R. McLean, Sault Ste. Marie, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1898; aged 57; died, April 1, of epidemic encephalitis.

T. Apolinaire Dufort, Waterloo, Que., Canada; McGill University Faculty of Medicine, Montreal, 1865; aged 89; died, April 6, of cerebral hemorrhage.

George A. Huntley, Greene, Ohio; Medical Department of Western Reserve University, Cleveland, 1895; aged 56; died, June 3, of mitral insufficiency.

Edward Lincoln Enochs, Orange, Calif.; Rush Medical College, Chicago, 1901; aged 63; died, March 21, at Tucson, Ariz., of pernicious anemia.

William H. Walker, Cleveland; Medical Department of Western Reserve University, Cleveland, 1891; aged 72; died, May 19, of heart disease.

John R. Flexer, Joliet, Ill.; University of Pennsylvania School of Medicine, Philadelphia, 1886; aged 65; died suddenly, June 29, of heart disease.

D. G. Van Ostrand, Candor, N. Y.; New York Homeopathic Medical College and Hospital, 1895; aged 61; died, January 21, of pneumonia.

Alexis N. Bellemare, Yamachiche, Que., Canada; Laval University Medical Faculty, Montreal, 1891; died, May 4, of cirrhosis of the liver.

Philip I. Cromwell, Arcadia, Neb.; Albany Medical College, 1870; aged 80; died, July 1, at Henry, Ill., of pneumonia and arteriosclerosis.

A. O. L. Smith, Henderson, Texas; Memphis (Tenn.) Hospital Medical College, 1896; aged 65; died, June 4, of osteosarcoma of the hip.

Arthur Louis La Ferriere, Chicopee Falls, Mass.; Baltimore Medical College, 1902; aged 52; died, February 17, of acute nephritis.

Adolphus Monroe Sarvis, Dallas, Texas (licensed, Texas, under the Act of 1907); aged 68; died, June 24, of valvular heart disease.

John T. McKeel, Graham, Tenn. (licensed, Tennessee, 1892); aged 73; died, June 9, at Pinewood, of hypertrophy of the prostate.

Edgar M. Outland, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1890; aged 66; died, June 30, of embolism.

John M. Auld ✠ Chicago; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 74; died, July 6, of brain tumor.

George Washington Hill, Catawba, S. C.; Southern Medical College, Atlanta, 1888; aged 62; died, June 20, of pneumonia.

Alba Jesse Whitley, Tulsa, Okla.; Leonard Medical School, Raleigh, 1913; aged 46; died, May 25, of appendicitis.

Frank Edward Collins, Edgar, Wis.; St. Louis University School of Medicine, 1909; aged 43; died, June 17.

CORRECTION

Dr. McCarthy Is Not Dead.—Following a report which later proved to be erroneous, THE JOURNAL, July 14, published an obituary of Dr. John C. McCarthy of Malden, Mass. Dr. McCarthy is alive and well and recently returned to Malden to practice.

Bureau of Investigation

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Syrup Dublanc.—The National Drug Company of Santurce, Porto Rico, was selling in February, 1927, a quantity of "Syrup Dublanc," which the federal officials declared was misbranded. When analyzed by the government chemists the article was reported to be a solution containing phosphates, lime, iron, iodides, benzoate of soda and sugar. The label declared that the product was an "Ideal Reconstituent" and "the best Reconstituent For The Blood, The Bones And The Nerves." Several other claims equally false and fraudulent were made. In March, 1927, Rafael Robert of Santurce, Porto Rico, appeared as claimant and admitted the government's allegations. Judgment of condemnation and forfeiture was entered and the court ordered that the product be released to Roberts on the execution of a bond of $200, conditioned in part that the preparation be not sold or otherwise disposed of until properly labeled.—*(Notice of Judgment 15015; issued October, 1927.)*

Agmel
Nature's Remedy
A CONCENTRATED RAW FOOD
A POWERFUL TONIC CONTAINING NEITHER DRUGS NOR ALCOHOL
ESPECIALLY BENEFICIAL IN THE TREATMENT OF BRIGHT'S DISEASE DIABETES RHEUMATISM HIGH BLOOD PRESSURE INDIGESTION AND OTHER DISORDERS CAUSED BY INCORRECT DIET AND FAULTY ASSIMILATION
DIRECTIONS FOR USE
THE AGMEL CORPORATION

Agmel.—The Agmel Corporation of Los Angeles, California, shipped in November, 1926, a quantity of "Agmel," which the government officials declared was misbranded. When analyzed by the Bureau of Chemistry, Agmel was found to consist essentially of a concentrated plant juice containing approximately 60 per cent of sugars (sucrose and invert sugar). The preparation was declared as especially beneficial in the treatment of Bright's disease, diabetes, rheumatism, high blood pressure, indigestion, etc. It was also said to be a "Natural remedy for albuminuria and the urinary tract." There were a great many other claims that were equally false and fraudulent. In August, 1927, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—*(Notice of Judgment 15352; issued April, 1928.)*

Sauer Ju.—The C. M. Bogle Packing Company of Seattle, Washington, shipped in February, 1927, from Seattle to Los Angeles a quantity of "Sauer Ju," which the government officials declared was misbranded. When analyzed, the article was found to be sauer kraut juice. The label declared the stuff to be "The Elixir of Health" and a "superior agent" for correcting "Stomach and Intestinal Disorders, Kidney Troubles, Rheumatism, Lumbago, Skin Ailments, Colds, Obesity, Alcoholic Poisoning and various Contagious Diseases." These claims (and those that have been quoted are but a few of them) were declared false and fraudulent, and in April, 1927, C. M. Bogle, who traded as the Sauer Ju Sales Company, admitted the allegations and judgment of condemnation and forfeiture was entered. The court ordered that the product be released on payment of the costs and the execution of a bond, conditioned in part that the product be relabeled, in accordance with the law.—*(Notice of Judgment 15392; issued April, 1928.)*

Acid-O-Phil Tablets.—In July, 1927, the H. K. Mulford Company of Philadelphia shipped a quantity of "Acid-O-Phil Tablets," which the federal authorities declared were adulterated and misbranded in violation of the national Food and Drugs Act. The government charged that the article was adulterated in that it fell below the professed standard of strength and quality under which it was sold; the tablets were devoid of *Bacillus acidophilus*. The tablets were declared misbranded because the therapeutic claims made for them were false and fraudulent and applied knowingly and in wanton disregard of their truth or falsity. In November, 1927, no claimant having appeared, judgment of condemnation and forfeiture was entered,

and the court ordered that the product be destroyed.—*(Notice of Judgment 15423; issued June, 1928.)*

Crazy Mineral Water.—The Crazy Well Water Company of Mineral Wells, Texas, shipped in October, 1927, from Texas to Louisiana a quantity of "Crazy Mineral Water" that the federal authorities declared was misbranded. The basis for the charge lay in the fact that the labels gave the impression that the water was a cure for rheumatism, constipation, functional stomach diseases, liver diseases, cystitis, diabetes, Bright's disease, etc. These claims were declared false and fraudulent. In December, 1927, the Crazy Well Water Company, having appeared as claimant, judgment of condemnation and forfeiture was entered, and the court ordered that the water be dumped and the empty bottles and cases returned to the company.—*(Notice of Judgment 15447; issued June, 1928.)*

Correspondence

ROENTGEN-RAY DIAGNOSIS OF PERINEPHRITIC ABSCESS

To the Editor:—In The Journal, April 28, appeared two communications, from Philip J. Lipsett and from Edwin Beer, discussing roentgen-ray observations in acute perinephritic abscess, in which they described as characteristic roentgen-ray observations a definite lateral curvature of the lumbar spine, with the concavity toward the affected side, and a clouding and almost complete disappearance of the angle formed by the shadows of the inner border and lower pole of the kidney and the lateral margin of the psoas muscle.

Dr. Lipsett stated that Dr. Beer's search of the literature had failed to disclose any previous description of these roentgenographic observations, and gives him the credit for having made the original observation.

Dr. Bela Alexander described these observations in his book "The Examination of the Kidneys and Urinary Tract," published in 1912 by O. Nemnich of Leipzig. He mentioned two cases of perinephritic abscess, in which he found the disappearance of the line of the psoas muscle and the obscuring of the shadows of the transverse processes and the lower ribs, and that the shadow of the kidney being apparently enlarged and less clearly defined is a most important finding in these cases. In one of these cases there was a lateral spinal curvature and some contracture of the thigh muscles. In both of these cases the condition was verified by operation.

May 25, 1925, before the Hungarian Urologic Society, I described the roentgen-ray observations of perinephritic abscess as follows:

1. The shadow of the abscess is visible in or near the kidney.
2. The abscess itself (or its shadow) may not be visible, but an enlarged renal shadow is, more or less irregular in outline, this shadow being rather obscure and blending than sharp and definite.
3. The outline of the psoas muscle is partly or entirely missing, along with the contour of the other muscles, such as the quadratus lumborum.
4. The shadow of the lower ribs and transverse processes of the lumbar vertebrae is indefinite or not as sharply delineated as normally.

In this presentation and its publication I gave the exact interpretation of these signs, so that they may be taken at this time as completely explained.

The explanation of the enlarged renal shadow with the indefinite outline is that the fatty capsule of the kidney becomes edematous, absorbing the roentgen ray as much as or more than the kidneys and thereby causing the shadow of this enlarged denser area to appear on the film.

In very severe cases the renal shadow may entirely disappear, owing to its blending with the surrounding tissue shadow, thus preventing differentiation of the renal shadow from that of its adjacent structures.

Except in one instance, the lateral curvature of the lumbar spinal column was not well marked in these cases.

June 2, 1928, I demonstrated three more cases of perinephritic abscess before the Hungarian Medical Society, among which was only one with a marked lateral spinal curvature. As already mentioned, Alexander described one case with this lateral curvature.

My first publications relative to this subject appeared in the twenty-seventh number in 1925 of *Gyogyaszat* in the Hungarian language, and in the German *Fortschritte auf dem Gebiete der Roentgenstrahlen* (**34,** number 1/2, 1926). Most of the German books on this and allied subjects published since that time mention the foregoing facts. At the same time, I discussed the possibilities of the roentgen-ray diagnosis of simple serous perinephritis and chronic fibrous perinephritis, on the basis of observed cases. For full details of this, the reader may consult my original publications, which are readily available.

There is no question as to whom the credit for having first made the observations regarding this subject should be given. Dr. Bela Alexander in 1912 published a part of the signs and observations in perinephritic abscess. I elaborated on these with new and additional signs and observations and described the whole symptom complex in 1925, giving at that time a complete interpretation as it applied to the pathology of the condition.

Vidor Révész, M.D., Budapest.

DANGER FROM ANILINE DYES IN COLORED PENCILS

To the Editor:—I read with interest your answer to Dr. McGovern's query concerning the lead of copying pencils, in Queries and Minor Notes (The Journal, July 7). Many cases of injury of the eye by the aniline colors used in copying pencils have been reported, the severity of the injury varying from a mere temporary staining of the conjunctiva to perforating burns of the globe resulting in panophthalmitis and total loss of the eye. The process is that of cellular necrosis of the stained tissue, followed by sloughing. If the cornea or the sclera is affected, a perforating necrotic ulcer results in destruction of the eye.

Such radical differences of effect as are reported can occur only from agents of different chemical composition and activity. Vogt (*Arch. d'Opht.,* April, 1906) has reported experiments of the action of aniline colors on the conjunctiva. He found that the acid, neutral or mordant aniline colors produce little or no inflammatory reaction, while the basic colors cause violent inflammation, often resulting in panophthalmitis. The destructive action is explained as being the result of the affinity of these dyes for cell nuclei.

I have reported (*Arch. Ophth.* **45**:243 [May] 1916) a case of aniline injury with a necrotic ulcer of the lower lid, resulting in cicatricial entropion, and referred to several cases reported by other observers. In the eye cases reported there has been no evidence of any but local effects. You cite case reports in which distant effects occurred, effects on the liver, kidneys, intestine and axillary glands, from aniline injuries to the hand. It would be worth while to know whether these effects can be caused only by the basic colors, as is true of the local necrotic effects.

If the necessary chemical work can be done (I am not a competent chemist) to establish these facts, and the results presented in definite form to the manufacturers of pencils, there is no doubt that they would produce only the harmless variety of aniline colors for pencils. As long as the copying pencils are used there will be aniline injuries, and most of them to those very important members the eyes and the hands.

F. J. Curdy, M.D., Kansas City, Mo.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF MILD MERCUROUS CHLORIDE (CALOMEL) ON MIGRAINE

To the Editor:—A woman, aged 50, who has frequent attacks of migraine, is unable to find relief except by taking calomel, 1 grain, followed by cascara, 9 grains. This gives relief in three hours. If I follow the calomel with salts, vomiting follows and no relief is obtained. These attacks come as often as every five to ten days. How often with safety may I repeat this grain of calomel?

MARY L. ROSENSTIEL, M.D., Freeport, Ill.

ANSWER.—Quite indefinitely. The patient should, of course, be warned against possible salivation. It would be interesting to try, in this case, "podophyllum, the vegetable calomel," to determine whether the effect is due to the mercury or merely to the peculiar kind of purgative action inherent in these "cholagogue" cathartics.

URTICARIA CAUSED BY LIGHT

To the Editor:—Three or four years ago an article was published on the subject of irritation of the skin amounting to an intense erythema or even first degree burn caused by slapping or striking the skin after roentgen irradiation of the area struck. The article in question appeared, I think, in the *American Journal of Roentgenology and Radium Therapy*, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION or the *Journal of Radiology*. I mislaid my copy and desire very much to obtain another. Have you any record of such a paper, or of similar literature on the subject?

FREDERICK J. SHOOP, M.D., Brooklyn.

ANSWER.—An article by W. W. Duke, entitled "Urticaria Caused by Light," appeared in THE JOURNAL, June 23, 1923, p. 1835. This paper was reprinted, in part, by permission in *Radiology* in April, 1925, p. 279. Duke relates the case of a woman, aged 43, whose relatives were subject to hay-fever, asthma and urticaria. By exposure of the patient herself to any type of light that contained violet rays it was possible to produce hives. Exposure to summer sunlight caused erythema, itching and hives. Ordinary exposure to roentgen ray or colored light, except the blue violet, did not have these effects.

Another article by Duke (THE JOURNAL, July 5, 1924, p. 3) is on "Urticaria Caused Specifically by the Action of Physical Agents." Here the author reports the same case that is given in the two articles previously mentioned but discusses a number of other instances of sensitiveness to such physical agents as light, cold, heat, freezing, burns, mechanical irritation, and physical and mental exertion. In one of the pictures that accompany this article is shown the back of a patient subject to urticaria dermographica. On the skin is the print of a hand that was brought out by gently slapping the skin. The legend does not indicate, however, that heat or light had any part in this particular reaction.

TREATMENT OF POISON IVY ERUPTIONS

To the Editor:—I should like information concerning the cure and prevention of poison ivy as stated in an item sent out by Science Service, which reads:

"Poison ivy, the bane of the tourist's and picnicker's existence, has lost its terror before the onset of modern science. A remedy that is said to work in practically 100 per cent of all cases has been found in a common, cheap, nonproprietary chemical by a research worker of the United States Department of Agriculture, Dr. James F. Couch.

"The compound is potassium permanganate and is applied by swabbing a 5 per cent solution on the afflicted parts of the skin with a soft cloth or bit of cotton. . . .

"A preventive treatment which will enable susceptible persons to handle poison ivy with impunity has been worked out by Dr. James B. McNair of the Field Museum of Natural History of Chicago. This consists of a 5 per cent solution of ferric chloride, another common, nonproprietary chemical, in a half-and-half mixture of water and glycerin."

Is there as much truth as stated in the usefulness of these drugs? I am under the impression that such is not the case.

GEORGE M. TANGEN, M.D., Canby, Minn.

ANSWER.—Potassium permanganate has been used as a remedy for poison ivy for many years. Its use was advocated by Campbell (1894, p. 157), Syme (1906, p. 157), Von Adelung (1912, pp. 160-163) and Couch (1926). Its use has been opposed by Maisch (1865, p. 155), Blackwood (1880, p. 151), Lindley (1908, p. 153), Guernsey (1913, p. 157) and McNair (1921, p. 175). In 1912, Von Adelung found that a mixture of potassium permanganate and rhus poison was nontoxic when applied to the skin, and that the application of a solution of potassium permanganate to poison ivy eruptions resulted in accelerated healing (pp. 160-163).

Ferric chloride was used as early as 1886 by Browning. In 1917, McNair found that the poison ivy plant contained an oxidizing enzyme which greatly accelerated the oxidation of phenols (p. 71). In 1921 he obtained a positive test for the presence of a phenol group in the poison when tested with ferric chloride (p. 96). He found also that the precipitate formed by ferric chloride with the poison was nontoxic (p. 178). In the same year he found ferric chloride to be a more efficient remedy than potassium permanganate (pp. 175, 176). McNair advocates the use of ferric chloride as a preventive when applied to the skin previous to or following exposure to poison ivy and as a remedy in the early stages of the disease and treatment with paraffin in the later stages of the disease (pp. 179-180). The paraffin treatment has been described by D. P. Flagg(THE JOURNAL, Aug. 18, 1923, p. 598).

The page references given refer to "Rhus Dermatitis," by James B. McNair, and are given to aid in the verification of statements.

TREATMENT OF CHRONIC PROSTATITIS

To the Editor:—A man who has prostatitis of about eight years' duration has had repeated massage and about six months' treatment with diathermy. He also has a chronic gonorrheal arthritis of the right knee. When he came to me I massaged the prostate about twice a week and even three times a week for six or seven months with no reduction in the amount of pus expressed. Recently I have given him a course of mixed gonorrheal vaccine plus massage of the prostate and permanganate irrigation, with no appreciable improvement. I then tried gonococcus immunogen combined and am massaging again, but cannot see any resulting improvement in the condition. Can you suggest any other line of treatment? Do you think it is possible to clear up a case of this kind?

H. A. RIVIN, M.D., Delano, Calif.

ANSWER.—Prostatitis of the character described is refractory to treatment, but in many instances persistent efforts will be effective. The involvement of the seminal vesicles always present in such instances calls for stripping by a method which will cover the entire length of these organs.

Massage of the prostate and seminal vesicles, however, produces only a temporary evacuation of the exudate and transudate, and it is necessary to stimulate additionally the defensive forces of the body. For this purpose the systematic heating of the organs involved, the administration of exogenous and endogenous proteins, and the injection of certain drugs are available.

Diathermy is successful only if prolonged applications under moderate magnitude of the current are employed. Massage should follow twenty-four hours after each diathermic treatment in order to remove the copious exudation.

In case intravenous injections of a few minims of a polyvalent vaccine do not produce any results, intergluteal injections of milk may be tried or other nonspecific protein therapy.

DOSAGE OF ATROPINE FOR GASTRIC SPASM

To the Editor:—Please inform me as to the necessary hypodermic dosage of atropine sulphate required to eliminate gastric spasm in the roentgen work of the gastro-intestinal tract. Kindly omit name.

M.D., Alberta.

ANSWER.—One-seventy-fifth grain of atropine sulphate administered one-half hour before the examination will eliminate gastric spasm for roentgen-ray work. Some roentgenologists have recently questioned the ability of atropine to relax the spasm and believe that the disappearance of pylorospasm at the second examination is due to the patient's loss of fear of the examination and becoming accustomed to it.

POLIOMYELITIS IN THE HOSPITAL

To the Editor:—Our hospital has received some criticism as a result of admitting a patient with acute poliomyelitis. We have the patient isolated in a ward whose capacity is four beds; there is a private bath and toilet, all of which is used only by the attendant, who is an exceptionally intelligent and sensible mother. The patient was sent to the hospital by a recognized pediatrician and is under his care at present. The case has been reported to the state board of health. From the literature I am not able to find any instance of the spread of this disease in hospitals or even to children in the same family in the home. I should like your opinion regarding the safety of our policy, which may be used when any future case comes up, or in response to destructive and competitive newspaper items regarding this case.

J. WARREN BICKERSTAFF, M.D., Montgomery, Ala.

ANSWER.—Criticism is not indicated of the way in which this patient is handled. The isolation appears to be quite complete. It is customary to receive patients with infantile paralysis in hospitals in which patients with other diseases, infectious as

well as otherwise, are being treated at the same time. Under such circumstances the same degree of isolation and care should be practiced as in the treatment of other acute infectious diseases, such as scarlet fever and diphtheria. It is true, as stated by our correspondent, that there seems to be little danger from the spreading of infantile paralysis in properly managed hospitals, but the occurrence of several cases of poliomyelitis in the same family is not unknown.

TRANSMISSION OF CANCER NOT BY CLOTHING

To the Editor:—A patient of mine has been left several fine dresses by a friend who died of breast cancer. Is it safe for her to wear them? Please omit name.

M.D., Missouri.

ANSWER.—The dresses may be worn with the fullest assurance of absolute safety. So far as known, cancer is not transmissible by way of clothing.

TREATMENT OF PROSTATIC ADENOMA WITH X-RAY

To the Editor:—Will you please inform me as to the consensus—if there is any—concerning the efficacy of treatment of adenoma of the prostate (benign hypertrophy of the prostate) with roentgen rays. Are the end-results as good as with surgical prostatectomy? Please give references in literature.

LEO EISIRSON, M.D., Brooklyn.

ANSWER.—Neither the roentgen ray nor radium has been found to be of any value in the treatment of adenoma of the prostate (benign hypertrophy) and results cannot be compared with those of surgical removal of the gland. The following references may be consulted:

Yocum, A. L., Jr.: X-Ray Treatment in Hypertrophy of the Prostate, *Arch. Physical Therapy* **8:** 416 (Aug.) 1927.
Philips, H. B.: X-Ray and Radium Treatment in Hypertrophy of the Prostate, *M. J. & Rec.* **127:** 238 (March 7) 1928.

SWELLING OF HANDS AND FEET

To the Editor:—Can you suggest the cause and treatment of swelling simultaneously of the feet and hands, or only the hands, or only the feet and sometimes the feet and hands alternately? Physical examination discloses no abnormalities. The health is usually good.

J. H. BOYD, M.D., Trenton, Mich.

ANSWER.—The condition described corresponds to one of the phases of angioneurotic edema. It occurs frequently without any apparent cause, may be hereditary, or may result from emotional disturbances or exposure to cold. The present tendency is to regard it as an allergic phenomenon. The patient may be tested out for sensitization to some protein or many other substances which are accounted as the exciting causes. Subsequent treatment consists in the elimination of the causative substances as determined by the tests. Ordinarily no treatment is required. An injection of from 0.3 to 0.6 cc. (5 to 10 minims) of epinephrine or from 25 to 50 mg. of ephedrine may be administered during an attack.

INCREASE IN SPAN OF LIFE

To the Editor:—I am wondering whether you can furnish me with accurate statistics on the increase in span of life, not only in recent years but, if possible, from medieval times. It is very important that we in educational work should be fortified with definite statistics on the service which the profession of medicine and various types of health education have rendered to the nation.

E. W. Tiegs, Los Angeles.

ANSWER.—Data bearing on this question can be found by consulting the following books:

Moore, H. H.: Public Health in the United States: An Outline with Statistical Data, New York, Harper and Brothers, 1923.
Falk, I. S.: The Principles of Vital Statistics, Philadelphia, W. B. Saunders Company, 1923.
Newsholme, A.: The Elements of Vital Statistics, New York, D. Appleton & Co., 1924.
Dublin, L. I.: Health and Wealth, New York, Harper and Brothers, 1928.

The source of other relevant material in the form of periodicals, reprints or pamphlets is indicated by the following references:

Dublin, L. I.: The Possibility of Extending Human Life, Metropolitan Life Insurance Company, 1922.
Fisk, E. L.: Extending the Health Span and Life Span After Forty, *South. M. J.* **16:** 447 (June) 1923.
Educating for Longer Life, Metropolitan Life Insurance Company.

L. I. Dublin's book, the most recent of all this material, is the authority for the data now to be given.

Among primitive races and among the ancients, the average duration of life was very low, probably not more than twenty years. In 1840 the expectation of life already reached about forty years in England and about the same figure in our New England. Today it is in advance of 58 years in our country. Half the population born today may expect to reach the age of 66, and one fourth may hope to reach the age of 77. A little over a hundred years ago, half the population could expect to reach only 18 years of age and a quarter 52 years.

Expectation of Life at Birth

Principal Countries or States at Various Times

Country—Year	Expectation at Birth
England and Wales	
1838–1854	40.88
1871–1880	42.98
1876–1880	43.56
1881–1890	45.42
1891–1900	45.95
1901–1910	50.45
1910–1912	53.42
1920–1922	56.95
Scotland	
1861–1870	42.09
1871–1880	42.37
1881–1890	45.12
1891–1900	46.06
1911	51.64
1921	54.71
France	
1817–1831	39.55
1840–1859	40.15
1861–1865	39.82
1877–1881	42.12
1898–1903	47.43
1908–1913	50.46
Italy	
1876–1887	35.25
1899–1902	43.04
1901–1910	44.53
1910–1912	47.38
Belgium	
1881–1890	45.11
1891–1900	47.10
Denmark	
1835–1844	43.65
1860–1869	44.55
1880–1889	47.85
1885–1894	48.05
1895–1900	51.70
1906–1910	56.40
1916–1920	56.95
1921–1925	61.10
Finland	
1881–1890	42.80
1891–1900	44.25
1901–1910	46.30
1911–1920	46.26
Germany	
1871–1880	37.01
1881–1890	38.71
1891–1900	42.26
1901–1910	46.57
1910–1911	49.04
United States (orig. reg. states) 1901	49.24
1910 (orig. reg. states)	51.49
1920 white (orig. reg. states)	55.16
1920 white (total reg. states)	56.32
1926 (total reg. states)	57.74

Country—Year	Expectation at Birth
Switzerland	
1876–1881	41.90
1881–1888	44.49
1889–1900	47.10
1901–1910	50.70
1920–1921	55.90
Sweden	
1816–1840	41.53
1841–1845	44.27
1846–1850	43.48
1851–1855	42.57
1856–1860	42.31
1861–1870	44.60
1871–1880	46.95
1881–1890	50.01
1891–1900	52.28
1901–1910	55.75
1911–1920	56.90
Holland	
1850–1859	37.32
1870–1879	39.55
1880–1889	43.75
1890–1899	47.60
1900–1909	52.20
1910–1920	56.10
Norway	
1856–1865	48.67
1871–1880	49.81
1881–1890	49.97
1891–1900	52.27
1901–1910	56.26
1911–1920	57.16
Prussia	
1867–1877	36.68
1890–1891	40.60
1891–1900	42.83
1900–1901	43.95
1906–1910	48.22
Bavaria	
1891–1900	39.48
1901–1910	43.78
Saxony	
1891–1900	39.80
1900–1911	44.77
India	
1881–1891	25.07
1891–1901	23.80
1901–1911	22.96
Massachusetts	
1855	39.77
1890	43.48
1895	45.35
1901	47.75
1910	51.19
1920	55.25

TREATMENT OF SCAR CERVIX—LICHEN PLANUS

To the Editor:—1. Should there be any after-treatment given a rather long scar following a cervical cautery for cystic degeneration and an erosion? The patient is 40 years of age. She complains of leukorrhea since cauterization two months ago; none was previously noted. 2. Can you give me a plan of treatment for lichen planus confined to the ankle and knee of one leg. The patient is a professional woman, aged 60. Liquor carbonis detergens, Lassar's paste, zinc calamine, and phenol (carbolic acid), boric acid and glycerin solution have been used with only temporary results. The eruption is of ten years' duration. Lately the ankle patch has been spreading. Please omit name and address.

M.D., California.

ANSWER.—1. An attempt should first be made to determine whether the leukorrhea is due to the scar tissue in the cervix or to some other cause, such as vaginitis due to *Trichomonas vaginalis*. If mild douches will relieve the leukorrhea temporarily it is advisable to wait and see whether the discharge will disappear. Should the leukorrhea remain persistent, it might be advisable to remove the scar surgically.

2. If the hypertrophic lichen planus areas are few and localized, beneficial results are often obtained by freezing with

carbon dioxide snow or superficial destruction with monopolar electrothermy. An ointment containing salicylic acid, 4 per cent, and crude coal tar, 4 per cent, applied for long intervals under oiled silk occasionally helps when there are numerous areas.

CAUSE OF DEATH DURING ALCOHOLIC INTOXICATION

To the Editor:—Will you be good enough to state your opinion on the following case: A robust man of about 37 was addicted to the use of alcohol for years. His capacity for indulgence in "moonshine" was more than ordinary, even for an inveterate drinker. About once a month he was accustomed to drink heavily for several days at a time. Two days ago a doctor was called after a week of continuous and heavy drinking, the patient demanding a hypodermic so that he might sleep. He was given one-fourth grain of morphine subcutaneously and 15 grains of chloral hydrate by mouth. He fell asleep very soon, about 11 p. m., and at 6 a. m. his wife passed by his room and heard him snoring. At 7:30 a. m. she went into his room and found him dead. A bottle of "moonshine" was on his dresser. The doctor was called. On examination he found the face blotchy, with pale and purple spots. His tongue, which was blue, just protruded between his teeth. His body was just beginning to become rigid, but was not quite so. His hands were warm, his face cold; his body was white, not blue, and he was lying on his right side. On a previous "spree" another doctor had been called because the man was choking to death from having swallowed his tongue. This doctor pulled his tongue forward, and after an hour or two the patient was in good condition. The latter physician also appeared just after the first one arrived on the morning of the death of the patient, and stated that the patient died from swallowing his tongue again. This he said without looking into the mouth. Being the medical examiner, he could have made a postmortem examination, but did not think it necessary. He simply sent the bottle of "moonshine" away for analysis. The dispute between the two physicians is this: The first one claims that the diagnosis of the cause of death as being due to asphyxia from swallowing the tongue is not justified on the evidence, and that the second doctor had no right to assume such was the case simply because the patient had nearly choked to death by that method on a previous occasion. The first doctor believes that presumably death was due to poisoning from bad "moonshine," but is not sure without an autopsy to settle the matter. Please state your opinion as to the probable cause of death. Omit name.

M.D., Massachusetts.

ANSWER.—The indications are that death resulted from intoxication, alcoholic and otherwise, the precise cause or causes of which cannot be determined without complete autopsy and chemical examination. It does not seem possible that death can occur from "swallowing of the tongue" in a person with a virtually normal mouth and throat. At any rate, medical literature does not contain any reports suggesting such a possibility. After removal of the lower jaw, death has resulted from asphyxia due to the tongue's falling back into the pharynx. Christian Fenger made interesting observations in such cases, as shown by the following quotation from an address by E. R. LeCount on Christian Fenger as Pathologist (Transactions of the Chicago Pathological Society **6**:1, 1903). "He [Fenger] increased the number of the relatively few pathologic conditions known to cause spontaneous sudden or instantaneous death by his account of postoperative asphyxia due to closure of the laryngeal opening through falling backward (during sleep) of the tongue after its attachments have been cut away in operations on the floor of the mouth. To confirm his suspicions as to the cause of death in an instance of this sort reported with his usual candor, he removed the calvarium and base of the skull in cadavers, cut away the connections of the tongue and larynx to the lower jaw, and observed the changes in the aperture of the larynx by altering the position of the head."

"INTESTINAL FLU"

To the Editor:—Would you kindly give me a short discussion on "intestinal flu"? Is there really such a primary disease or entity, or is this a combination of words behind which some men hide when they run up against an enteritis that they cannot explain?

J. M. KERCHEVAL, M.D., Wolcottville, Ind.

ANSWER.—Various gastro-intestinal symptoms, such as nausea, vomiting and abdominal pain, have been described in epidemic influenza. Swelling of Peyer's patches and of the mesenteric lymph nodes have been observed also but, according to Jordan (page 282) in his recent comprehensive work, Epidemic Influenza, so-called independent gastro-intestinal influenza must be regarded as only an occasional rarity, the significance of which is obscure. In some cases the gastro-intestinal symptoms may be due to intercurrent or secondary infection, in others perhaps to a local selective action of the influenza toxin, and perhaps in others to a localization of the influenza virus itself. There is no doubt that terms such as "intestinal flu" have been used and are being used loosely, and in some instances the name "intestinal flu" has been applied to epidemics of water-borne disease, perhaps because of their sudden onset. During periods of epidemic influenza it would not be strange if group cases of other acute ailments might be diagnosed hastily as influenza, but there is no good excuse for diagnosing cases of acute gastro-intestinal disturbances during interepidemic periods as "intestinal flu."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 4. Sec., Dr. Harry C. DeVighne, Juneau.

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts 1 and 2, at all Class A schools, Sept. 12-14. Exec. Sec., Dr. E. S. Elwood, N. E. Cor. 15th and Locust Sts., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 13-14. Sec., Dr. Charles Duncan, Concord, N. H.

OKLAHOMA: Oklahoma City, Sept. 11-12. Sec., Dr. J. M. Byrum, Shawnee, Okla.

PORTO RICO: San Juan, Sept. 4. Sec., Dr. D. A. Biascoechea, Box 804, San Juan.

ADDITIONAL APPROVED HOSPITALS AND LABORATORIES

The Council on Medical Education and Hospitals at the June meeting in Minneapolis approved the following hospitals and clinical laboratories:

HOSPITALS APPROVED FOR INTERN TRAINING

St. Luke's Hospital, Jacksonville, Fla.
Methodist Episcopal Hospital, Fort Wayne, Ind.
Mercy Hospital, Council Bluffs, Iowa.
St. Lawrence Hospital, Lansing, Mich.
Lutheran Hospital, St. Louis.
St. Louis Mullanphy Hospital, St. Louis.
St. Joseph's Hospital, Elmira, N. Y.
St. Agnes Hospital, Raleigh, N. C.
King's Daughters' Clinic and Hospital, Temple, Texas.
Methodist Hospital, Madison, Wis.

HOSPITALS APPROVED FOR RESIDENCIES IN SPECIALTIES

Essex Mountain Sanatorium, Verona, N. J.
St. Alexis Hospital, Cleveland.
Danville State Hospital, Danville, Pa.

CLINICAL LABORATORIES APPROVED

Clinical Laboratory, A. Trumper, director, Montgomery, Ala.
Laboratory of Mona E. Bettin, Los Angeles.
Laboratory of C. W. Bonynge, Los Angeles.
Terry Clinical Laboratory, M. C. Terry, director, Los Angeles.
Laboratory of Marion H. Lippman, San Francisco.
Laboratories of Drs. Bunce, Landham and Klugh, George F. Klugh, director, Atlanta, Ga.
American Laboratories, Benjamin Markowitz, director, Chicago.
Pan American Laboratory, Aldea Maher, director, New Orleans.
Laboratory of Drs. Gamble Bros. and Montgomery, E. T. White, director, Greenville, Miss.
Clinical Pathology Laboratory, Phebe L. DuBois, director, New York.
Lenox Hill Hospital Laboratory, George L. Rohdenburg, director, New York.
George Alder Blumer Research Laboratory, Clarence L. Russell, director, Utica, N. Y.
Cincinnati Biological Laboratory, Albert Faller, director, Cincinnati.
Laboratory of E. R. Shilling, Columbus, Ohio.
Clinical Laboratory of A. H. Schade, Toledo, Ohio.
Wesley Hospital Laboratory, W. H. Bailey, director, Oklahoma City.
Laboratory of King's Daughters' Hospital, J. E. Robinson, director, Temple, Texas.
McGuire Clinic, S. W. Budd, director, Richmond, Va.
Laboratory of F. C. Hodges, Huntington, W. Va.

Rhode Island April Examination

Dr. B. U. Richards, secretary of the state board of health, reports the written and practical examination held at Providence, April 5-6, 1928. The examination covered 7 subjects and included 70 questions. An average of 80 per cent was required to pass. Of the 6 candidates examined, 5 passed and 1 failed. The following colleges were represented:

PASSED		Year Grad.	Per Cent
Georgetown University School of Medicine	(1924)	94.5, (1927)	88.7
Columbia Univ. Coll. of Phys. and Surgs.	(1878)	85.3, (1927)	89.9
Jefferson Medical College of Philadelphia	(1898)		91.1

FAILED		Year Grad.	Per Cent
University of Naples, Italy	(1922)*		65

* Verification of graduation in process.

THE INTERRELATIONS OF PHYSIOLOGY AND INTERNAL MEDICINE*

CARL J. WIGGERS, M.D.
CLEVELAND

The relationship between physiology and internal medicine has often been discussed—and from many angles. I shall consider it from three standpoints: (*a*) the contribution of physiology to medical science; (*b*) the adaptation of its teaching to the requirements of medical students, and (*c*) its correlation with the interests of clinical medicine.

THE CONTRIBUTION OF PHYSIOLOGY TO MEDICAL SCIENCE

In the broadest modern usage of the term, physiology represents the sum of our scientific knowledge concerning the functions of living matter. But, comprehensive as our information is, there are still so many gaps that it remains a foremost function of physiology departments to foster research and investigation. Indeed, no physiology laboratory can lay just claim to large financial support or, in fact, justify its existence unless this obligation to science and medicine is discharged. This duty has been performed in a way that can only be described as eminently satisfactory. Space prevents me from doing more than indicating the scope of this service to medicine by appending a partial list of physiologic researches which are of immediate interest to the clinician. The investigations I have in mind include, among many others, such subjects as coagulation of the blood; hemolysis; regeneration and destruction of blood cells; spleen function; oxygen and carbon dioxide carriers of the blood; anoxemia; acapnia; acid-base balance; control of respiration; action currents of the heart; arrhythmias; arterial and venous pulses; the mechanism of the heart beat; its work, size and efficiency; the sounds and murmurs of the heart; blood pressure; capillary circulation; shock and hemorrhage; motions and secretions of the gastro-intestinal tract; functions of the gallbladder and liver; hormones; glands of internal secretion; growth, vitamins; basal metabolism; exercise; fever; water balance; urinary secretion; edema; integrative action of the nervous system; cortical and cerebellar functions; conditioned reflexes; postural reflexes; tonus; sympathetic innervations; referred pain. . . . But why prolong the list when one has only to glance at the editorial pages of our leading medical journals and to compare the relative space devoted to discussion of physiologic discoveries?

But our laboratories are also concerned with the solution of problems which are more fundamental in character and not so obviously applicable to clinical medicine. In the not very remote past this zeal for penetrating into the mysteries of life could not be understood by the more practically minded clinician; at times it was even referred to somewhat sneeringly. With the daily demonstration that surprisingly practical applications not infrequently result from the most fundamental discoveries, this attitude has changed.

The methods used in such investigations are chiefly those of chemistry and of physics. In the race, the application of chemical methods has outdistanced the use of physical means, with the result that the daughter sciences of biochemistry and pharmacology were born. In watching their growth and development to the age at which they have become separate sciences, we have almost neglected to notice that physiology has long been impregnated with the sperm of physics as well, and that, though the gestation period is somewhat uncertain, the sister science of biophysics is soon due to arrive. Unfortunately, however, this generic name has already been bestowed on the offspring of other parents. Consequently, when the science having the proper genes is born, it will become necessary either to redefine the name or to seek a more suitable appellation.

In some quarters, biophysics has quite unfortunately been regarded as the application to physiology and medicine of certain more recent developments in physics. So considered, it bears about the same relationship to the subject I have in mind that organic chemistry does to biochemistry. Its parentage is physics; it lacks the chromosomes of biology. In other quarters, a tendency exists to confuse biophysics with general physiology. But the latter science employs chemical as well as physical methods.

What, then, should the science of biophysics as an offspring of physiology include? Its scope and natural limitations are indeed difficult to define. For, while we may be quite positive as to what the science should not be, we cannot be so certain as to what it should include. We can note well directed "biophysical tendencies" in all physiology laboratories, but the interests are still so diversified that it is difficult to predict where the bounds will be drawn. I presume that the science should include all investigations that seek to establish the physical changes responsible for the reactions of living matter, and should incorporate at least a large proportion of investigations concerned with the ultimate mechanisms of living matter by the most exact physical methods, new and old. But there will always be a certain amount of overlapping, just as is now the case in the related sciences of physiology, pharmacology and biochemistry.

Physiologists of today are entrusted with the prenatal care of this developing science and, in this capacity, must exercise every effort so that it may attain a proper start in life. We must see to it that it receives adequate sustenance and that it is neither asphyxiated nor prematurely born. Every effort should be made to assist junior members in a department in acquiring such contacts with the physical and mathematical sciences as are necessary for their application to the fundamental problems of physiology. Men with competent training in physical science should likewise be added to the physiology staffs, but they should not merely be added in the capacity of advisers; they must be trained and developed into physiologic investigators as well. Then, as they become enamored of the unbounded possibilities which exist in unraveling the mysteries of life processes, their previous physical training can be given free rein. Only by this process of developing men who have an equally broad insight into physical and physiologic problems can we hope to develop the real science of biophysics and make its contributions of value to science and medicine alike.

THE ADAPTATION OF TEACHING TO THE NEEDS OF MEDICAL STUDENTS

Physiology has shared with other basic sciences both formal and informal criticisms of its teaching policies. I have been engaged in the teaching of physiology for nearly a quarter of a century. During that period, I have listened to criticisms and suggestions made by educators, colleagues and students, but have never devised apparatus by which inconsequential mutterings could be recorded or amplified into screeching discords. During this period of service in three different medical schools, I have had frequent occasion to change my plans and methods of instruction—I hope always for the better. And I also hope that I have not yet become static in this tendency. But I have neither written nor discoursed on the subject, believing that in education as in research it is important to collect adequate data from experiments personally witnessed before attempting to draw conclusions of somewhat general application. It is entirely on the basis of such experiments in pedagogy performed on classes in physiology that I now venture to make a report.

Experimental Material.—The number of students employed in these experiments was approximately 1,200; they were not

* From the Department of Physiology, Western Reserve University School of Medicine.
* Read before the joint meeting of the Southern Interurban Clinical Club and the New York, Pennsylvania and Ohio Interurban Clinical Club, Cleveland, May 4, 1928.

anesthetized; all worked under considerable initial tension. Although the entrance requirements have gradually been raised from the completion of high school courses to at least three years of college work, the student material has been exceedingly uniform as far as the pedagogic experiments were concerned. The students exposed to longer periods of college work were without doubt more mature, showed greater decorum, displayed better judgment, and possessed, of course, a fuller scientific knowledge and general culture. All these qualifications make it possible to start instruction on higher planes and to include more advanced information. But, as regards the qualities of attentiveness, interest, zeal and inquisitiveness I fail to see startling differences. Our students of today are imbued with no greater innate urge to study or contemplate than those of twenty years ago. Few have acquired the technic of organizing their studies, of outlining their assigned reading, of reasoning logically or of thinking clearly. Many have not mastered the elements of English, and comparatively few, not of foreign parentage, have a practical reading acquaintance with a foreign language.

Conditions of Experimentation.—Certain basic principles were always kept in mind, regardless of the type of instruction tested:

1. The courses were always organized primarily for men and women who planned to become physicians—let us hope, of a superior sort.

2. The instruction by laboratory and didactic work was always so organized that the student obtained at least an elementary knowledge in all fields of physiology.

3. Students were assisted in digesting and assimilating the vast amount of information available in textbook and reference form by condensing and systematizing this knowledge. This was tried by lectures, recitations and conferences—individually and combined in varying proportion.

4. Emphasis was placed on the necessity of acquiring a permanent knowledge of physiology and the ability to use it to practical advantage.

5. Students were encouraged to acquire sufficient familiarity with reference books, monographs and reviews to enable them to remain students of physiology and to enlarge their knowledge as occasion arose.

6. One phase of the subject was treated in considerable detail, so that the students acquired at least an inkling as to the vast amount of effort expended in establishing each successive link of evidence.

7. Efforts were made through various expedients to kindle at least a spark of investigative inclination.

Choice of Methods.—When several methods are tried, one often remains the method of choice. This has been the case in my trials of different pedagogic methods. By this I do not mean to imply that it is the only method or, indeed, universally applicable. Several factors enter; among these are the sequence of courses in the curriculum, the hours allotted to the subject, the caliber of the students, the size of classes, the number of instructors available, and, above all, the personal equations of the teachers. Consequently, there is no hope that the teaching of physiology can ever be regulated by formula. The elimination of this or that supposed evil by conference or survey is more hopeless even than the abolition of battleships among nations. We shall do well to agree on principles and tendencies in these matters.

At Western Reserve University School of Medicine, instruction in physiology begins toward the end of the first year, i. e., after the students have acquired an insight into anatomy, histology, embryology and biochemistry. Coordination with the premedical subjects of chemistry and biology has been attained. In an elementary course of approximately 100 hours, we aim to stress the application of physical and mathematical sciences in the study of life phenomena. Indeed, the course is growing more and more into what may be defined as an elementary course in biophysics. Interest in this phase of physiology must be established in the opening session—it must not only be maintained but also grow as the work progresses. This is impossible if the student is deluged with purely physical experiments seasoned only with a promise of applicability at some later date. On the contrary, the student must at once be introduced by lecture and experiment to simple phenomena of living tissues and must learn to apply common methods by which they can be studied in the laboratory. We start, therefore, with a study of the phenomena of muscular contraction, and follow this by a consideration of the blood, secretion, nerve reflexes and special senses. While the student thus acquires a knowledge of certain fundamental functions stey by step, experiments, demonstrations and talks are opportunely introduced to show how these fundamental phenomena can be explained by physical forces and resolved by the application of physical methods. But the real enthusiasm of students is aroused in carefully conducted conferences in which the results of laboratory experiments are discussed and correlated with information gained by reading and by lectures. This interest aroused in students is exhibited no less by the excited arguments and discussions one overhears in the corridors, and by the zeal with which new proof of this or that conception is sought in our library, than by the animation with which general discussion is entered into in the classroom.

But such general enthusiasms could not long be maintained, even in a first year medical class, were the pertinent relation of physiology to practical medicine not continually stressed. Only a relatively small percentage of our medical students would, I believe, retain a continued interest in that phase of physiology which aims to reduce body functions to a fundamental physical or chemical basis.

In the very first session, therefore, the theme is announced that physiologic science represents the foundation of modern medicine and that the processes which lead to life, disease, senescence and death are mediated through fundamental chemical and physical reactions which express themselves as changes in function. This thought is reiterated, developed and exemplified as the course continues. The course rarely ends without students and instructors alike registering their regret that more hours cannot be devoted to this interesting phase of physiology. But, as in the successful drama, it is probably best to lower the curtain before the tedium of an overdrawn performance begins to dull the intellect.

The student returns to the study of physiology in the beginning of his second year for a period evaluated in the catalogue as 224 hours. Actually, considerable extra time is voluntarily spent by the majority of students. This itself is a favorable symptom. The first half is devoted to acquiring a practical knowledge of the essential subjects of respiration, blood, circulation, secretion, digestion, metabolism, the ductless glands and the central nervous system. The experiments in the laboratory are designed so that the student may: (*a*) acquire an elementary technic in operative procedures on animals; (*b*) learn the use of apparatus and methods which find equal applications in hospitals; (*c*) obtain first-hand observations on an experiment or two on each essential subject, and (*d*) develop practice in describing, analyzing and interpreting physiologic reactions. The second half of the course aims to reconsider more fully the subject matter already covered in an elementary manner, but it also correlates the functions of different systems and illustrates their clinical bearing. For example, acidosis, exercise, anoxemia, arrhythmias, fever, diet, diabetes, vomiting and ataxia, as they affect various organs, are discussed chiefly in conferences or in lectures. We hope soon to establish closer contacts also with clinical departments to the end that students may visualize the clinical pictures of the particular physiologic process under discussion.

In the laboratory, students carry out experiments which stress similar relations between physiology and medicine. They no longer perform experiments calculated to demonstrate various aspects of respiratory, circulatory or secretory physiology, but rather they create and study experiments on dyspnea, acidosis, circulatory derangements of a physiologic nature, diabetes, fever and exercise. It may be added that this is not presumed to duplicate or to substitute for subsequent courses in pathologic and clinical physiology; its aims rather to prepare for these.

Toward the end of the period, each group of students is given an experimental problem, or itself selects one. The plan of attack is outlined, apparatus is supplied, the experiments are performed, and the results are analyzed. Sufficient time is allowed so that reports of each group are presented to the class as a whole. Discussion and criticism are encouraged.

During the course, every student is also required to select a subject of interest which he works up in detail in the reference library and presents in the form of a thesis.

To accomplish these ends demands a careful apportionment of the student's available time for reading, reference work, lectures, conferences and laboratory performance. The discussion now chiefly centers around the relative allotment of time for the performance of laboratory work and the amount of extramural notebook work that should be demanded. Within recent years, it has become somewhat the fashion to insist that laboratory work has become too extensive. The suggestion has indeed been offered that less time and money be invested in apparatus and animals and proportionately more in duplicating departmental library books. I cannot subscribe to this attitude. In the first place, without a reasonable laboratory experience the student fails to profit by reading any but the most elementary expositions. Secondly, such an attitude fails to appreciate the full purposes of the physiology laboratory in medical education.

This leads logically to my defense of fairly extensive laboratory instruction. In my early years as assistant in physiology, it was customary to state that laboratory instruction imparts first-hand knowledge, in contrast to books and lectures, which impart second-hand information. There was a modicum of truth in this catchy phrase; but, as is often the case with slogans, only a modicum. It has always been held in continental Europe that a student's attempts to gain first-hand information by laboratory experiments generally results in first-hand misinformation. The efficiency quotient $\frac{\text{budget allowance}}{\text{apparatus requirements}}$ is always low. Hence, teaching apparatus must be simple and cheap or insufficient, except in wealthy institutions. In consequence, a large part is inadequate for the purpose to which it is devoted; and in Europe we have been accused of intellectual dishonesty in leading students to believe that they obtain precise results. The problems that can be attacked by students must perforce be simple ones; as soon as more complicated experiments are attempted, the results more often contradict than support didactic information. It is obvious that the continuance of elaborate and extensive laboratory courses cannot be justified solely on the basis that they are necessary to give first-hand information. The valid arguments in their favor are of quite another sort. Those which have a direct bearing on subsequent clinical instruction may be briefly summarized as follows:

1. Since Nature uses the experimental method of producing functional alterations in disease, it is important that the physician understand not merely the end-results of her experiments but something also of the methods adopted. Now, the methods of experimentation that the student practices in the laboratory are not fundamentally different from those which Nature employs in man.

2. Laboratory work associated with conscientious notebook work or followed by stimulating conferences furnishes the best means of training students in the intellectual processes of observation, description, reflection and deduction. The aberrant results, instead of being a drawback, furnish the best opportunity for giving these facilities full play.

3. The physiology laboratory is the logical place for students to obtain a training in the application of such forms of physical apparatus as have found a permanent place in the clinic. Experiments can easily be devised in which the student acquires the correct technic of recording respiration, blood pressure, electrocardiograms, pulses and basal metabolism at the same time that he studies physiologic phenomena.

4. The practical laboratory work offers an exceptional opportunity for inspiring the student to attack unknown problems with confidence. The medical student ordinarily becomes a veritable storehouse of known facts; he learns something of the methods by which they were acquired; he may have attained some ability in observing, evaluating and deducting from anticipated results. But let him be confronted in the laboratory or in the clinic with the problem of discovering facts which are not established and he is utterly helpless. Consequently, a small portion of the laboratory time can profitably be set aside for the execution of a small investigation, preferably of the student's own selection.

As to notebook requirements, my attitude has been considerably changed by matters of expediency. I consider the careful writing of a notebook one of the most valuable methods of scientific instruction. By carefully noting the manner in which an experiment was performed and objectively describing the records or data which were obtained, the power of describing observed phenomena accurately is developed. This is one of the most important requirements of the successful diagnostician. By analyzing and plotting the data, experience in deduction from observed or recorded facts is gained. If conscientiously pursued, the method is of incalculable value. The laboratory notebook is the case history of the experiment, and I fail to follow the clinician who objects to the one and so greatly stresses the other.

However, the method *is* time consuming if properly carried out, and, with the pressure of other work, it is not surprising that the student attempts numerous short cuts. This results in presentable books but often fails entirely in the objects for which such work is designed. I have therefore gradually diminished the amount of required notebook work, and after the first year limit it to a mere record of data for the majority of experiments, only an occasional experiment being assigned for detailed analysis. As this means that more of the assigned time must be devoted to group and class conferences, the time available for formally presented didactic work is decreased; hence the students must be encouraged to rely more largely on outside reading and study, and less on lecture notes.

CORRELATION WITH CLINICAL WORK

I have already indicated the efforts that our physiology department is making in adapting its teaching to clinical requirements. But, to make our efforts truly effective, the cooperation of the clinical instructor is also required. Early in the clinical courses of physical diagnosis, introductory medicine, or propedutics, and the physiologic reactions in disease should be stressed. Possibly a separate course in clinical physiology should be given. But, most important, the application of physiology should be stressed continually. To do this successfully, the clinician himself must be abreast of his times and must always be ready to discard opinions which experimental work has shown to be erroneous. There are, unfortunately, still too many clinical instructors of medical students whose outlook in physiology has not advanced beyond the time of Ludwig. It has recently been proposed that heads of clinical departments examine medical students as to their practical knowledge of preclinical subjects. I venture to suggest for the benefit of students and clinicians alike that such clinical examiners be periodically required to give evidence by examination or otherwise that they are, in

fact, masters of the subject they assay to judge. As far as physiology is concerned, this would be an acceptable step toward correlation.

But we must pass to other relations. It is now conceded that every entrant into clinical medicine as an academic life should have a preliminary training in pathology. But, since hospitals are the world's greatest laboratory of physiology, we should equally insist on a year's training in physiology. It is now recognized that the clinician, in addition to becoming a good diagnostician and administrator, must be an investigator. But the exact and controlled use of laboratory apparatus can no more be "picked up" than can diagnostic ability. Qualification in one direction does not carry with any guarantee of ability in the other. The remedy lies in insisting on an initial period of training in a physiology laboratory. Physiology departments should go out of the way to cooperate in this matter; indeed, no more important service to medicine exists. By such experience in a laboratory an acquaintance is formed with laboratory appliances and methods under the most favorable circumstances; an insight is gained into the need of controls both of apparatus and of experiment, and a judicious attitude is developed as to what must be done in person and what may safely be delegated to technical assistants. Claude Bernard in his book "Experimental Medicine" has phrased this thought well:

"One must be brought up in laboratories and live in them to appreciate the full importance of all the details of procedure in investigation which are so often neglected or despised by the false men of science calling themselves generalizers. Yet we shall reach really fruitful and luminous generalizations about vital phenomena only in so far as we ourselves experiment and, in hospitals, amphitheaters or laboratories, stir the fetid or throbbing ground of life. It has somewhere been said that true science is like a flowering and delectable plateau which can be attained only after climbing craggy steeps and scratching one's legs against branches and brushwood. If a comparison were required to express my idea of the science of life, I should say that it is a superb and dazzlingly lighted hall which may be reached only by passing through a long and ghastly kitchen."

It goes without saying that departments of physiology should ever be ready to confer with clinical investigators in regard to technical methods of research or the interpretation of results; but to what extent should they yield to pressing invitations to collaborate with or indeed join a member of a clinical staff in investigative work? The laboratory scientist, like the clinician, has full and busy days. Laboratory preparation for classes, research interests and administrative or teaching duties must have first lien on his time. The head of a department who allows himself to become so enamored of clinical problems that he neglects his laboratory interests may become popular with his colleagues but he is doomed to oblivion among scientists. Hence, his efforts at cooperation must be so ordered that other duties may not suffer. In regard to collaboration on clinical problems, he must therefore limit his interest. He should offer younger clinical investigators every assistance with technical methods and, if competent to do so, should suggest new ways of approach or even new lines of investigation. Having started a line of investigation and assisted the clinician in the technic of special methods—possibly to the extent of publishing a first joint paper—he should gracefully withdraw and leave the field of investigation to his clinical associate. In this way his time is free again for other duties or for help to other clinical investigators, and what is more important, the clinical associate, left with a method as well as a problem, is given the opportunity of testing his own ability and resourcefulness. In establishing such cooperation in research, clinical departments should more often take the initiative. Some laboratory scientists, like myself, are not backward in making suggestions, even to clinicians. The majority, however, are conservative persons who fear to offer their services lest they be not welcome, or perchance lest their advances be interpreted as a reflection on the clinician's capacity for research work. They therefore too often sit back, let the clinical investigator flounder, and chuckle at his mistakes.

The bonds of cooperation should be drawn closer also as far as the mutual education of the staffs is concerned. I know from informal conversations with colleagues in physiology that they would generally welcome an invitation to join in clinical ward walks with the clinical staffs and with students. In such ward relations, the physiologist should recognize his place and function. He must continually remind himself that he was not invited in the rôle of diagnostician, consultant or therapeutist. He should carefully reserve any opinions he may form in matters of diagnosis or treatment. He should view each patient as he would a physiologic experiment in the laboratory, restricting his discussions to observations of physiologic phenomena and their interpretation. This information may be extremely valuable to the physician in charge or it may be inconsequential in his handling of the patient. Such correlation of physiology and medicine is already being tried in a number of schools and, to judge from reports, is of the greatest mutual value.

A few remarks may be added as to the desirability of a more general attendance of physiologists at clinical-pathologic conferences. The reactions of physiologists may be described as lukewarm. The argument is advanced that the physiologist is interested primarily in reactions of the living body and that his interest ceases in the laboratory, when only the carcass of an animal remains. So, also, his interests are in the living patient rather than in the corpse. Nature's experiment is over; why should he partake in "scientific wakes" over the dead?

This attitude is not entirely justified and the premises on which it rests are not altogether sound. As a matter of fact, the interest of the physiologist does not die with the animal in the laboratory. Often analyses of results are largely made on the basis of graphic evidence and mathematical data which are evaluated months or years after the actual experiments have been concluded. In many phases of physiologic investigation it is quite impossible to do otherwise. Furthermore, the physiologist is frequently consulted by his associates in regard to the interpretation of results obtained in experiments with which he has had no contact. Yet he rarely hesitates to offer advice, criticism or suggestions to the best of his ability. Should he then hold back when his advice is desired in regard to similar data presented in the case histories, records of treatment, observations made by laboratory methods and the final histologic pictures of obvious pathologic processes? If, in either situation, the data and records are inadequate for the resynthesis of a probable physiologic picture, he has only to perform the plain duty of stating such as his opinion. He may perhaps go farther by suggesting that omitted data be looked for in future occurrences. Perhaps a more ideal cooperation would be realized, however, if the physiologist could observe the patient in the ward and discuss the same case at the clinical-pathologic conference. For, in conferences with other laboratory workers or clinicians, one can never quite escape the feeling that he could have advised better as to data had he himself witnessed the experiment.

CONCLUSON

Finally, may I venture the opinion that such closer relations between physiology and medicine depend chiefly on the attitude of the respective department heads. The progress already made has been determined by men not methods. Progress in correlative education in the past has come about slowly through a process of evolution. We may depend on it that the advances of the future will likewise result more largely from the perspiration of workers than from the inspiration of reformers. The curves of medical science and education have risen with even steeper gradients, and, by taking into consideration the data of the last twenty-five years of accomplishment, we can predict with mathematical certainty the great upward sweep of the curve in the next quarter century. Nor is it likely that the upward

sweep of the curve will be greatly accelerated in consequence of comprehensive reorganizations suggested by efficiency surveys of one sort or another. The mere act of placing hospitals and laboratories side by side or under the same roof in itself also accomplishes nothing. Let us hope, however, that this tendency to a closer physical union is symbolic of the fact that clinicians and physiologists are no longer making mere gestures of shaking hands across the street but are actually walking arm in arm.

Book Notices

I VACCINI ANTIRABICI FENICATI E LORO ODIERNE APPLICAZIONI. Del Dott. Vittorio Puntoni, professore di batteriologia nella r. Università e vice direttore dell'Instituto Antirabico di Roma. Paper. Pp. 116. Rome, 1927.

This consists of a critical review and a summary of the work done by others on phenol-treated preparations of antirabic vaccines, due credit being given to Professor Fermi for the priority of having introduced the phenolated rabies vaccine in practice. The author reviews the advantages and inconveniences of the phenolated rabies vaccines as now used, and gives briefly the statistical reports of various workers in antirabic institutes abroad and their results. The principal purpose of the work is to make known and describe his own method as used in Rome. Since 1919, Puntoni has studied accurately the action of phenol on the rabic virus in its various degrees of concentration and temperature, which heretofore had not been done systematically, and on which experimenters had reached most contradictory conclusions. Fermi and Semple had already shown that the phenol-treated rabies virus preserved its vaccinating properties even after the virus, which composes it, had been completely destroyed, but no comparative studies were made on the efficacy of such vaccines in relation to their vitality. After numerous and painstaking experiments on animals, the author had reached a conclusion that the phenolated vaccine whether containing alive or dead virus is always more efficient than the original Pasteur treatment, and also that the living phenol-treated vaccine, when used in emulsions of an increasing virulence, is more efficient than the phenol-killed vaccine. Puntoni, on the basis of his studies in 1920, evolved his new method of antirabic treatment with a living phenolated vaccine which he named "a method of phenolated emulsions of a graduated virulence." This he has divided into three types according to indications. The author does not make any pretense of having introduced in practice a new vaccine, having adopted fundamentally that of Fermi. Rather, he intended to establish a rational method for the use of a living phenolated vaccine, which has not been studied or applied by others. He gives in detail his method of preparation of the vaccine and its usage. He reports on 5,036 persons treated with his method, with only one true failure, or 0.02 per cent.

PRÉCIS DE PARASITOLOGIE. Par E. Brumpt, professor à la Faculté de médecine de Paris. Fourth edition. Cloth. Price, 100 francs. Pp. 1452, with 800 illustrations. Paris: Masson & Cie, 1927.

The anticipation with which parasitologists have looked forward to the appearance of this book has been justified. In the present edition this well known and highly prized work has been entirely worked over, considerably increased in volume, and brought down to date. When one notices its size (240 pages and ninety new illustrations have been added), the justification for calling it a précis might be questioned, although doubtless the name has been retained for historical continuity. As one reviews the work one finds that new material has been introduced at almost every point. This is true not only of the descriptions of individual species of parasites and of recent work on their biology, treatment and prevention but also in the general discussions with which the various sections are opened. At the beginning the author has included under his general discussion on parasitism the remarkable biologic relation recently discovered by Tate Regan in which the males of a deep sea fish are found as appendages on the outside of the female, to which they have become so firmly attached that the tissues are continuous and the male lives a strictly parasitic existence. Much that is new has been added under the heading of the spirochetes. The author included this entire group under the protozoa, and has given the most complete and critical review of these organisms that can be found in any textbook. Considerable new material has been introduced at other points among the protozoa, dealing both with well known groups like the flagellates and with less well understood organisms like those of oroya fever and verruga, but it would be impossible to enumerate here even the more important additions. Recently discovered species are introduced and carefully treated under the trematodes and nematodes. Discussions have been clarified and yet condensed. The order of the material has been modified to represent better biologic relationships of the organisms treated. The classification has been changed where necessary to include the results of recent biologic studies, some of which are available here for the first time in any textbook. In short, the plan of the author and the desire of the publisher that this be thoroughly revised is realized in a degree not usual in new editions. In looking over the work one is impressed with the way in which our knowledge has been expanded in most recent years. Thus, the protozoa now take up more than a third of the book by virtue of the demand for space to record recent discoveries, whereas the sections on the worms, although considerably changed, have just about held their own relatively and the section on insects, despite the introduction of much important material, hardly reaches the same relative compass that it attained in earlier works. Professor Brumpt is to be warmly congratulated on the successful outcome of his work. He has performed a service for students and workers in this field all over the world. The book is a complete treatment which can hardly be duplicated and which will be a boon to all, but perhaps most to those who are forced to do their work at points where extensive libraries are not available for consultation.

RECENT ADVANCES IN OPHTHALMOLOGY. By W. Stewart Duke-Elder, M.A., D.Sc., Ph.D., Assistant Ophthalmic Surgeon, St. George's Hospital. Cloth. Price, $3.50. Pp. 343, with 77 illustrations. Philadelphia: P. Blakiston's Son & Company, 1927.

This deals rather completely, but in a brief manner, with the various phases of ophthalmology. It is divided into eight chapters, on action of light on the eye, physiologic optics, embryology, methods of diagnosis, physiology, diseases, methods of treatment, and neurology. It covers the ground thoroughly and brings the various subjects down to date. That portion dealing with the slit lamp and the gonioscope is of especial interest to the beginner. A bibliography of recent work on all subjects follows the discussion of each subject. The book is a scholarly survey of the field of ophthalmology and will serve the student and the practitioner as a guide for his reading and study in that it selects the wheat from the chaff in the voluminous ophthalmic literature.

CHIMIOTHÉRAPIE PAR VOIE BUCCALE AVEC L'ARSENIC. Par le Docteur Kurt Heymann. Préface de M. le Docteur Levaditi de l'Institut Pasteur de Paris. Paper. Pp. 133, with illustrations. Paris: J. B. Baillière & Fils, 1928.

The author is convinced that Ehrlich and Hata were mistaken when they abandoned, in their study of the chemotherapy of syphilis, the derivatives of quinquivalent arsenic in favor of those of trivalent arsenic. Their finding that the former were more toxic than the latter is now known to be due to the fact that these investigators were working with impure products. Acetarsone, an arsenic acid derivative analogous to arsephenamine, which is a derivative of arsenic trioxide, possesses many advantages over the arsphenamines. It is readily soluble, is stable, and is sufficiently devoid of irritative action to be administered by mouth or by hypodermic injection. While without therapeutic value in trypanosome infections in man, acetarsone has been found, the author asserts, to be of the greatest possible value in spirochete infections in animals as well as in man. He cites his own observations and those of quite a number of other, mostly French, investigators in support of the conclusion that there is no difference, excepting a quantitative one, between the action of arsphenamine and acetarsone in the prophylaxis and treatment of syphilis, the former being more powerful but also much more dangerous. Heymann has obtained the best results with the prescription originally devised by Levaditi. One should take the total day's dose at one time

on an empty stomach half an hour before breakfast, beginning with two tablets of 0.25 Gm. each and taking three tablets the second and four tablets the third day. In the treatment of manifest syphilis, the latter dose does not need to be exceeded. It is continued for three, five or seven days, according to the severity of the case, with intervals of as many days to secure its elimination. The author habitually gives a 21 Gm. dose a month. Just as arsphenamine is no longer relied on for a cure of syphilis, so acetarsone must not be relied on. The treatment should be combined with bismuth as well as with mercury. In tropical frambesia, acetarsone is of great value, especially in view of the hostility of the savages to intravenous injections. Acetarsone has also been found of value in the diseases ascribed to fusospirillar symbiosis: pyorrhea alveolaris and phagedenic ulceration, as well as in bronchial and intestinal spirillosis. It has also given encouraging results in amebic dysentery, in lambliasis and in tertian malaria.

PRINCIPES SCIENTIFIQUES DE RÉCUPÉRATION FONCTIONNELLE DES PARALYTIQUES. Par le Docteur Gabriel Bidou. Préface du Professeur Georges Guillain. Paper. Price, 20 francs. Pp. 141, with 45 illustrations. Paris: Le Livre Pour Tous, 1927.

The material in this booklet is not worthy of any review further than to state the author's views that the functional recovery of the patient with paralysis is accomplished by methods based on mechanical principles. The physician, however, while applying mechanical means, must maintain the morale of the patient at a high level in order to reestablish for him his position in the family and his relation to society.

THE CHILD'S DEVELOPMENT AND HEALTH RECORD. By Harold O. Rub, A.B., M.D., Chief of the Pediatric Service of St. Luke's Hospital, Cleveland, Ohio, and Justin A. Garvin, B.S., M.D., Visiting Pediatrician of St. Luke's Hospital, Cleveland, Ohio. Cloth. Price, $2.50. Pp. 107. New York: D. Appleton & Company, 1928.

In diagnosis, two things are paramount—the history and the physical examination. History taking would be simplified if accurate records concerning previous illnesses were at hand. This is especially true with children, since all data concerning them must be secured from the parents. In order to facilitate the keeping of accurate records, this book has been prepared. Provision is made in it for recording in orderly sequence from birth to 14 years observations having a direct bearing on the child's health and growth. If the care of the child should fall on some one other than the parent, a record such as this will furnish an account of the child's previous health.

In order that such records may be of value, it is essential that they be accurately kept. This entails the problem of educating parents to sublimate their hopes and aspirations for what they want the child to be to what he actually is. It is only human for the parents to want their children to surpass others. Much of such misinformation is avoided in this book by providing that many of the details are to be inserted by the physician.

GRUNDISS DER KLINISCHEN STUHLUNTERSUCHUNG, ZUSAMMENFASSENDE DARSTELLUNG DER WICHTIGSTEN MAKROSKOPISCHEN, MIKROSKOPISCHEN UND CHEMISCHEN UNTERSUCHUNGSMETHODEN UND IHRER DIAGNOSTISCHEN BEDEUTUNG. Von Alfred Luger, Privatdozent für innere Medicin, Universitätsklinik in Wien. Paper. Price, 36, marks. Pp. 341, with 209 illustrations. Vienna: Julius Springer, 1928.

Drs. Luger, Kovacs, Lauda and Preissecker have collaborated in a complete volume on the examination of feces. All types of examination, macroscopic and microscopic, chemical and bacteriologic, are described. Of practical interest is a discussion of the clinical value of the particular technics. There are many illustrations. While it may be too complete as a textbook, it is of great value as a reference book and guide for laboratory technicians.

LIVING WITH OUR CHILDREN. By Lillian M. Gilbreth. Cloth. Price, $2.50. Pp. 309. New York: W. W. Norton & Company, Inc., 1928.

With the modern hurry and rush have come things likely to interfere with the smooth course of family life. With a multitude of new interests, parents are unable to devote attention to their relations with each other and with their children. Consequently, family life runs on haphazardly, so that many opportunities for education are lost. In this book the author suggests a scheme whereby each child born into the family is to become a contributing member to the group as a whole, in order that, so far as possible, the home will prepare him for meeting the problems of mature life. The material is presented in three parts. The first deals with the relations to be established between husband and wife. The second discusses the working practice of daily life, and the last is concerned with measures and tests of progress. The establishment of proper relationships in the home is of importance medically. Many nervous and emotional disorders are directly the result of conflicts in the home. Many cases of hysteria are produced by these types of conflicts. If the physician is to retain his position of honor as counselor for the family's health, he must prepare himself for the task by the acquisition of information of the type presented in this excellent book.

TREATMENT OF DISEASE IN INFANTS AND CHILDREN. By Hans Kleinschmidt, M.D., Professor of Pediatria, University of Hamburg. Authorized translation of the fifth German edition with additions by Harry M. Greenwald, M.D., Attending Pediatrician to the United Israel Zion Hospital, Brooklyn, N. Y. Cloth. Price, $5 net. Pp. 359. Philadelphia: P. Blakiston's Son & Company, 1928.

Few textbooks in English deal solely with the treatment of disease in children. Those studying pediatrics are forced to rely on the material presented in the usual textbooks for therapy. In this book are collected those therapeutic measures which are strongly indicated and which really appear necessary for the successful treatment of various diseases. Only methods and drugs that the author has found of value in his broad experience are considered. Dietetic measures are of course given most consideration, while medicinal treatment is considered secondarily. The diseases are taken up in the usual textbook fashion, with a chapter on general therapy at the beginning followed by a discussion of the nutritional disturbances. In this portion the author describes exactly the steps the practitioner should take in the disorder in question, and this procedure will be helpful to the practicing physician. In the last chapter are presented formulas and recipes for the normal infant. Certain of the prescriptions lose their value because of the inclusion of drugs with trade names, probably well known in Germany but unknown to the average reader of medical works written in English.

DIE TECHNIK DES ORTHOPÄDISCHEN EINGRIFFS. Eine Operationslehre aus dem Gesamtgebiet der Orthopädie. Von Dr. Philipp J. Erlacher, a. o. Professor für orthopädische Chirurgie an der Universität in Graz. Paper. Price, 44 marks. Pp. 482, with 331 illustrations. Vienna: Julius Springer, 1928.

This book, written by one of the leading orthopedic surgeons of Europe, presents much new material. The author is a man of excellent accomplishments and is considered by the Americans who have visited him as being an excellent surgeon. He presents much material that is original. It is a book on the order of Steindler's Operative Orthopedics. The illustrations are well chosen. The photographs, parts of which have been outlined for illustrative purposes, are good. The anatomic sketches are excellent. The author gives due credit to American orthopedic surgeons, especially Albee, Hibbs, Campbell and Steindler. He also refers to the work of the British, French and Italians in orthopedic surgery. He quotes much of the work done by the Austrians and the Germans. One is a little surprised that the Abbott method of treating scoliosis is given so much attention. This book should be of great value to German and Austrian orthopedic surgeons because it acquaints them for the first time with American orthopedic surgery.

THE MATERIAL AND METHODS OF THE GYNÆCOLOGICAL AND OBSTETRICAL DEPARTMENT IN THE UNIVERSITY OF LIVERPOOL. By W. Blair Bell, B.S., M.D., F.A.C.S., Professor of Gynæcology and Obstetrics, the University. Boards. Price, 2/6. Pp. 61, with 32 illustrations. Manchester. Sherratt & Hughes, 1928.

Dr. Bell, indefatigable worker and producer, presents a tabulation of the material for teaching, and a description of the methods used in his combined department of obstetrics and gynecology. The large and well stocked museums and laboratories are described and illustrated. By the aid of floor plans one can visualize their arrangement and also that of the outpatients' clinic and birth rooms. The curriculum for the students, their systematic lectures and the time devoted to research are all concisely, but comprehensively enough, described, and copies of the principal history or case records and administration blanks are presented. The essential details of the aseptic

technic are given and illustrated with photographs. "Multum in parvo" may be said of this monograph. It will be studied with interest and profit by heads of obstetric and gynecologic departments the world over. Similar articles by the author have recently appeared in the *Journal of Obstetrics and Gynecology of the British Empire.*

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

RECENT ADVANCES IN MEDICINE: CLINICAL, LABORATORY, THERAPEUTIC. By G. E. Beaumont, M.A., D.M., F.R.C.P., Physician, with Charge of Outpatients, Middlesex Hospital, and E. C. Dodds, M.D., Ph.D., B.Sc., Professor of Biochemistry in the University of London. Fourth edition. Cloth. Price, $3.50. Pp. 426, with 48 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

Annual volume recounting new work in the field of internal medicine.

PRACTICAL CLINICAL PSYCHIATRY FOR STUDENTS AND PRACTITIONERS. By Edward A. Strecker, A.M., M.D., Professor of Nervous and Mental Diseases, Jefferson Medical College, Philadelphia, and Franklin G. Ebaugh, A.B., M.D., Professor of Psychiatry, University of Colorado Medical School. Second edition. Cloth. Price, $4. Pp. 458, with 30 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

New edition of easy reading and brief handbook of psychiatry.

A TEXT-BOOK OF ACTINOTHERAPY: With Special Reference to Ultra-Violet Radiation. For Practitioners and Students. By D. D. Rosewarne, M.R.C.S., L.R.C.P., Officer in Charge, Central Military Laboratory, Port Said. Cloth. Price, $4. Pp. 237, with 20 illustrations. St. Louis: C. V. Mosby Company, 1928.

Another handbook on the uses of ultraviolet although at least a score of such notebooks are already available.

THE DUODENUM: Medical, Radiologic and Surgical Studies. By Pierre Duval, Jean Charles Roux and Henri Béclère, of the Surgical Clinic, Faculty of Medicine, Paris. Translated by E. P. Quain, M.D. Cloth. Price, $5. Pp. 212, with 127 illustrations. St. Louis: C. V. Mosby Company, 1928.

Translation of a French monograph revealing how even the intestines must be specialized by segments.

DIATHERMY: ITS PRODUCTION AND USES IN MEDICINE AND SURGERY. By Elkin P. Cumberbatch, M.A., B.M., D.M.R.E., Medical Officer in Charge, Electrical Department, St. Bartholomew's Hospital. Second edition. Cloth. Price, $7. Pp. 332, with 87 illustrations. St. Louis: C. V. Mosby Company, 1928.

Good but optimistic discussion of value of diathermy in medicine.

SYPHILIS. A Treatise on Etiology, Pathology, Symptomatology, Diagnosis, Prognosis, Prophylaxis and Treatment. By Henry H. Hazen, A.M., M.D., Professor of Dermatology and Syphilology, Medical Department of Georgetown University. Second edition. Cloth. Price, $10. Pp. 643, with 165 illustrations. St. Louis: C. V. Mosby Company, 1928.

New edition of a good clinical guide to syphilis.

THE INJECTION TREATMENT OF VARICOSE VEINS. By A. H. Douthwaite, M.D., M.R.C.P., Assistant Physician to Guy's Hospital. Third edition. Cloth. Price, 4/- net. Pp. 51. London: H. K. Lewis & Co., Ltd., 1928.

Sudden popularity of this method brings rapidly appearing new editions of this guide to technic.

CHEMICAL ENCYCLOPÆDIA. An Epitomized Digest of Chemistry and Its Industrial Applications. By C. T. Kingzett, F.I.C., F.C.S. Fourth edition. Cloth. Price, $10. Pp. 807. New York: D. Van Nostrand Company, 1928.

New edition of a good encyclopedia for persons needing average references in chemical field.

A HANDBOOK OF CLINICAL GYNECOLOGY AND OBSTETRICS. By Rae Thornton La Vake, A.B., M.D., F.A.C.S., Assistant Professor of Obstetrics and Gynecology, University of Minnesota. Cloth. Price, $4. Pp. 281, with 35 illustrations. St. Louis: C. V. Mosby Company, 1928.

New textbook in a field in which books are frequent but progress slow.

VESTIGES OF PRE-METRIC WEIGHTS AND MEASURES. Persisting in Metric-System Europe, 1926-1927. By Arthur E. Kennelly, A.M., Hon., Sc.D., Hon. Professor of Electrical Engineering at Harvard University. Cloth. Price, $2.50. Pp. 189. New York: Macmillan Company, 1928.

Studies of weights and measures historically and geographically.

RECENT ADVANCES IN HÆMATOLOGY. By A. Piney, M.D., Ch.B., M.R.C.P., Research Pathologist, Cancer Hospital, London. Second edition. Cloth. Price, $3.50. Pp. 318, with 22 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

Recapitulation of discoveries relative to the blood and circulation.

DISEASES OF THE THROAT, NOSE AND EAR. Volumes I and II. By Dan McKenzie, M.D., F.R.C.S.E., Surgeon, Central London Throat and Ear Hospital. Second edition. Cloth. Price, $17 per set. Pp. 677, with 254 illustrations. St. Louis: C. V. Mosby Company, 1928.

Extensive but expensive consideration of otorhinolaryngology.

NEW AND NONOFFICIAL REMEDIES, 1928. Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1928. Cloth. Price, $1.50. Pp. 489. Chicago: American Medical Association, 1928.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1927 WITH THE COMMENTS THAT HAVE APPEARED IN THE JOURNAL. Cloth. Price, $1. Pp. 103. Chicago: American Medical Association, 1928.

Medicolegal

Communications Made to a Physician Before Employment

(Crawford v. State (Neb.), 216 N. W. R. 294)

The Supreme Court of Nebraska says that in this case, wherein the defendant was charged with driving an automobile while he was in a state of intoxication, resulting in manslaughter, he complained that the court erred in permitting a physician to testify as to claimed admissions made by the defendant on the way to town with respect to his having been drinking. The objection was made that the conversation was incompetent because given to the physician while the relation of physician and patient existed. The testimony was clear, however, that the defendant did not employ the physician to look after his wounds until after they had arrived in town, so that at the time of the alleged conversation the relation of physician and patient did not exist. Besides, it is extremely doubtful whether the fact of his drinking would aid the physician in patching up a slight scratch on the defendant's head. There was no merit in the defendant's contention. As stated in the syllabus by the court, in a criminal prosecution communications voluntarily made by the defendant to a physician not then employed as such and not necessary to professional services are not privileged.

State Law and Right to Register Under Harrison Act

(Bruer v. Woodworth (U. S.), 22 Fed. R. (2d) 577)

The United States District Court, E. D. Michigan, S. D., says that the collector of internal revenue of the United States for that district declined to receive the money from the plaintiff for registration and a permit to dispense narcotic drugs, or to allow the registration and to issue the permit, on the ground that the attorney general for the state of Michigan had ruled that a practitioner of osteopathy is not a physician within the meaning of the state narcotic law (act number 92, public acts of 1923), entitling him to prescribe drugs and narcotics. Thereupon the plaintiff filed this suit for a writ of mandamus to compel the collector to comply with his demand.

The commissioner of internal revenue, with the approval of the secretary of the treasury, is given power to make all necessary rules and regulations for the carrying of the Harrison Narcotic Law into effect. However, this court takes it that this does not and could not give to the commissioner, or any one else, the power to do what Congress itself could not do, and that is to police the traffic on purely moral or

abritrary grounds. It would hardly be contended that the national body could absolutely prohibit the traffic. The issue is one of law and, Congress having given no definition of what is meant in section 1 of the Harrison law by the phrase "physicians . . . and other practitioners lawfully entitled to distribute, dispense, give away, or administer any of the aforesaid drugs to patients upon whom they in the course of their professional practice are in attendance, . . ." we must look to the state law where the applicant resides to determine who may distribute the drug. Besides, this court hardly thinks that Congress would have the power to say who is or who is not a physician; for this, it seems, would be to enter the realm of police regulation reserved to the states.

It appears that a physician is permitted under the law of Michigan to prescribe and dispense narcotics. The collector took the position that he would grant or withhold a permit to physicians and particularly to osteopathic practitioners, according to whether or not the highest legal adviser of the state (the attorney general) found that they were permitted to dispense narcotics under the law. There has not been a ruling on the question, so far as osteopaths are concerned, by the court of last resort of the state, but the predecessor of the present attorney general held that the law permitted them to dispense such drugs and accordingly this applicant was granted a permit by the collector for the year 1926-1927, and was refused renewal for the current year only because of the ruling of the present attorney general.

This court thinks that the reasonable, sensible view to take is that the legislature intended to prevent the practice of medicine, surgery, osteopathy, etc., except by those who were qualified to do so, according to well recognized methods used by their respective schools of practice, and that it did not purport to draw any fine and narrow distinction between them such as would prevent the use of any usual and recognized agency for the accomplishment of their respective ends. Modern thought abhors the idea that a prospective mother shall be denied the alleviation to be had from the use of some kind of narcotic in childbirth, and if an osteopathic physician is permitted to attend and render his professional services on such occasions, both by law and by the recognized limits of his profession, it appears to this court unreasonable to say that he should be denied the use of those agencies which would permit him to do so according to modern and humane standards. In this court's opinion, nothing short of positive prohibition would suffice to sustain that contention. This court's conclusion is that the plaintiff was entitled to relief, and that a writ of mandamus should issue to the defendant, directing him to register and grant to the plaintiff a permit authorizing him to dispense narcotics in the practice of his profession according to law, as interpreted herein.

Res Ipsa Loquitur and Speculation in Malpractice Case

(Gallagher v. Kermott et al. (N. D.), 216 N. W. R. 569)

The Supreme Court of North Dakota holds that the doctrine of res ipsa loquitur (the thing speaks for itself) has no application in a malpractice case, and an unfortunate or bad result does not supply proof of negligence. It also holds that where the evidence is such that the inference of negligence is purely a matter of speculation, it is insufficient to support a verdict.

The plaintiff in this case was a boy, aged 14 years, who had his right foot caught between the bumpers of two cars, or between a bumper and a car. Construing the complaint liberally, the court says that it would seem to charge negligence, consisting in the failure of the defendant surgeon to give prompt treatment to disinfect the wound and in causing a tourniquet to be unnecessarily and so improperly applied as to result in gangrene and the amputation of the leg at the knee joint. The testimony offered by the plaintiff on the subject of the application of the tourniquet was conflicting. The strongest evidence that would go to establish any negligence in its application was that of the plaintiff's father, but he did not profess to have accurate knowledge or to have observed closely what the nurses did at various times when they came to the room during the night; he described it as "fussing" with the tourniquet. This evidence would clearly not justify a finding that there was negligence in leaving the tourniquet tightly placed for an unnecessary length of time or so long as to have caused gangrene, for the plaintiff's evidence, coming from the witness who had the most accurate knowledge on the subject, clearly tended to prove the contrary. It was further seen by reference to the expert testimony offered by the plaintiff that there was no evidence tending to show that the treatment in relation to the tourniquet was improper or that it constituted negligence in treatment; neither did such testimony establish as a fact, or warrant the drawing of an inference of fact, that the condition of the plaintiff's leg resulted from the improper application of the tourniquet. On the contrary, it rather tended to establish that it did not so result.

There was also lacking in this case expert testimony on the subject of gangrene which would tend to show that the condition which later developed might have been obviated by resort to available measures of treatment when the defendant was called to treat the plaintiff. Whether or not the defendant's acts or omissions were consistent or inconsistent with proper practice under the facts disclosed was left a matter of conjecture for the jury, there being no evidence as to what proper practice required in such a situation as that which confronted the defendant. The burden of proof was on the plaintiff. It was said by this court in *Whitson* v. *Hillis*, 215 N. W. 480, that, as a general rule, it is improper to submit a malpractice case to a jury without expert testimony to establish the standard according to which it is to judge the conduct of the defendant. While it was held in that case that there was evidence on which the jury could find negligence, in the absence of proof of such standard, it is clear to this court that in a case like the present one such an inference would be purely a matter of speculation. What did the defendant do that, consistently with good practice, he should not have done? What did the defendant omit to do that, consistently with good practice, he should have done? Did any such acts or omissions cause the injuries complained of? These questions found no answer in the evidence. It is elementary that the rule of res ipsa loquitur has no application in such cases. The court cannot reason from an unfortunate or bad result to a negligent cause. The evidence must show such cause. This court is of the opinion that the general rule is clearly applicable to a case such as the present one. It follows from what has been said that the evidence was insufficient to support the verdict for the plaintiff. However, as this court is unable to say that the deficiencies of proof were such that they could not be supplied on another trial, a new trial is granted.

Society Proceedings

COMING MEETINGS

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Toronto, September 14-16. Dr. James E. Davis, 1825 Geddes Avenue, Ann Arbor, Mich., Secretary.

American Electrotherapeutic Association, Boston, Sept. 10-14. Dr. Richard Kovacs, 223 East 68th Street, New York, Secretary.

American Hospital Association, San Francisco, August 6-10. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 11-13. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Delaware, Medical Society of, Rehoboth, Sept. 11-12. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Idaho State Medical Association, Yellowstone Park, August 27-29. Dr. J. N. Davis, Kimberly, Secretary.

Kentucky State Medical Association, Richmond, Sept. 10-13. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Medical Library Association, New York, September 5-7. Miss Sue Biethan, Medical Librarian, University of Michigan, Ann Arbor, Sec'y.

Montana, Medical Association of, Yellowstone Park, August 27-29. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

Nevada State Medical Association, Reno, September 21-22. Dr. H. J. Brown, Box 688, Reno, Secretary.

Pacific Association of Railway Surgeons, San Francisco, August 24-25. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.

South Dakota State Medical Association, Hot Springs, August 7-9. Dr. John F. D. Cook, Langford, Secretary.

Washington State Medical Association, Seattle, August 27-30. Dr. Curtis H. Thomson, 508 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Sept. 11-14. Mr. J. G. Crownhart, 153 East Wells Street, Milwaukee, Executive Secretary.

Wyoming State Medical Society, Yellowstone Park, August 27-29. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Pathology, Boston

4: 181-284 (May) 1928

*Carcinoids (Argentaffin-Cell Tumors) and Nerve Hyperplasia of Appendicular Mucosa. P. Masson, Montreal.—p. 181.
*Pathologic Anatomy of Tularemia in Man. E. W. Goodpasture and S. J. House, Nashville, Tenn.—p. 213.
*Lipochromes: I. Reaction of Animals to Presence of Carotin. C. L. Connor, Boston.—p. 227.
Id.: II. Identification of Carotin, Xanthophyll, and Associated Lipoids in Tissue. C. L. Connor, Boston.—p. 235.
*Angioma Racemosum Venosum. R. C. Buckley, New Haven, Conn.—p. 245.
*Spontaneous Rupture of Heart. R. C. Buckley, New Haven, Conn.—p. 249.
*Effect of Oral Administration of Potassium Iodide and Thyroid Substance on Mitotic Proliferation and Structure of Acini in Thyroid Gland in Guinea-Pig. S. H. Gray and L. Loeb, St. Louis.—p. 257.
Observations on Incubated Normal Bloods. C. P. Rhoads and F. Parker, Jr., Boston.—p. 271.

Carcinoids and Nerve Hyperplasia of Appendix.—Masson reports his study of fifty appendicular carcinoids found in 1,200 appendixes examined. These tumors may form in the body of the appendix where, in growing, they may cause a stenosis of the lumen with retention, followed by acute inflammation. More often (in forty-six of the fifty specimens), they are found at the distal end. If the carcinoid is small, the tip of the appendix is not deformed; if large, it is swollen like a pendulum. This swelling is often the only sign of a possible appendicular tumor but sometimes the presence of tumor is indicated by an opaque, yellowish infiltration of the peritoneal connective tissue and fatty lobules that cover the tip of the appendix. The axial region of completely obliterated appendixes often (86 per cent of the specimens) contains nerves and neuromas enclosed by a discontinuous sheath formed by vestiges of the muscularis mucosae. These neuromas always contain argentaffin cells of divers forms. If the argentaffin cells disappear, the neuromas regress and are absorbed individually, notwithstanding their connections with Meissner's plexus of the submucosa. Study of partially obliterated appendixes shows that these neuromas arise from the periglandular plexus and that they often continue the neuromatous evolution which had commenced when the mucosa still contained gland tubules. This periglandular and subglandular neuromatosis always occurs in nerves inhabited by argentaffin cells. The intranervous argentaffin cells spring from the epithelium that lines the bottom of the glands of Lieberkühn.

Pathologic Anatomy of Tularemia.—The pathologic anatomy of a typical case of ulceroglandular tularemia studied at autopsy is presented by Goodpasture and House. The histology of the initial ulcer is described for the first time in the human disease. The lesions are essentially lymphatic in distribution affecting many contiguous groups of lymph nodes, the spleen and liver. The individual lesions have a certain similarity to those of tuberculosis, but collectively they constitute a characteristic picture.

Presence of Carotin in Tissues.—Carotin, the principal lipochrome found in the animal body, was extracted by Connor from carrots and purified. On injection intraperitoneally into guinea-pigs granulomatous lesions were found similar to those of familiar foreign body reactions. Carotin did not appear in the blood or urine of guinea-pigs after injection or ingestion of relatively large amounts. It produced no effect in a rabbit when injected intravenously.

Angioma Racemosum Venosum.—The explanation for the sudden death of a young pregnant woman was found by Buckley at necropsy to be an intraventricular hemorrhage from the rupture of a vessel of an angioma racemosum venosum—a rare abnormality of the vascular system of the brain. The patient, aged 23 years, was in about the eighth month of her first pregnancy and apparently in excellent condition. During the two months preceding admission, the patient had fallen five separate times while walking. Preceding each fall, the patient experienced a sudden loss of strength in the legs. The last fall occurred five days before admission. During the attacks there was no failure of vision, no pain, no dizziness and no loss of consciousness. Strength returned in about five minutes, and the patient was always able to resume the walk. Nothing in the past history appeared to be related to the present condition. On the morning of admission the patient felt in her usual good health. Shortly after arising and while at the toilet the patient suddenly cried out that she was blind, and then fell unconscious. Two hours later the patient was brought to the hospital and died there shortly after admission.

Spontaneous Rupture of Heart.—The three cases reported by Buckley present several interesting features. In two cases there was associated diabetes mellitus and evidence of infection of the cardiovascular system. The etiology of the infection was not clear in either case. The anterior descending branch of the left coronary artery was completely occluded in each case, and in one case the descending branch of the right coronary artery was also occluded. Evidence of old and recent infection of these vessels was presented. One of these patients was only 35 years old.

Iodine Increases Mitotic Activity of Thyroid Gland Cells.—Gray and Loeb assert that oral administration of iodine to guinea-pigs markedly increases the mitotic activity in the thyroid gland during the first three to four weeks. This first phase of increased activity is followed by a second phase of depression, which is accompanied by definite structural alterations in the thyroid gland. Indications were found that this second phase is at least partly due to pressure exerted by the contents on the walls of the acini. In contradistinction to the effect of potassium iodide, administration of thyroid gland substance is not followed by a phase of stimulation, but in this case, within the first two weeks, a period of depression sets in which may be accompanied by certain structural changes in the gland. As the result of thyroid feeding, the mitotic activity is diminished as compared with that found in the controls.

Archives of Neurology and Psychiatry, Chicago

19: 969-1166 (June) 1928

Evolution and Darwinian Theory of Human Descent: Viewed from Standpoint of Multiple Primate Ancestry. C. K. Mills, Philadelphia.—p. 969.
Physiology, Psychiatry and Inhibitions. S. Cobb, Boston.—p. 981.
*Forced Drainage of Cerebrospinal Fluid: In Treatment of Infections of Central Nervous System. L. S. Kubie, New York.—p. 997.
Stuttering: III. Certain Reflexes During Stuttering. L. E. Travis and L. B. Fagan, Iowa City.—p. 1006.
Cerebellar Phenomena in Lesions of Temporal Lobe. I. L. Meyers, Los Angeles.—p. 1014.
Electrical Skin Resistance in Normal and in Psychotic Subjects: Psychogalvanic Studies of Emotional Reactions. H. C. Syz and E. F. Kinder, New York.—p. 1026.
Quantitative Studies on Human Muscle Tonus: I. Methods. J. C. McKinley and N. J. Berkwitz, Minneapolis.—p. 1036.
*Cerebral Circulation: III. Vasomotor Control of Cerebral Vessels. H. S. Forbes and H. G. Wolff, Boston.—p. 1057.
Neurinoma of Cauda Equina: Bilateral Sciatica. G. B. Hassin, Chicago.—p. 1087.

Forced Drainage of Cerebrospinal Fluid.—Kubie shows that it is both safe and rational to combine a maximal forcing of fluids with the principle of continuous or frequent drainage of the cerebrospinal fluid in the treatment of patients with infectious diseases of the central nervous system. The ultimate utility of this procedure, and its limitations, can be established only by clinical experience.

Vasomotor Control of Cerebral Vessels.—By direct micrometry and photomicrography, together with simultaneous measurements of cerebrospinal fluid pressure and of intracranial and extracranial vascular pressures, evidence has been secured by Forbes and Wolff that the circulation of the brain is not regulated wholly from a distance by splanchnic or systemic vasomotor control. On the contrary, many influences share in

this vital regulation. Thus, it has been found that, although the changes in caliber of the cerebral arteries may passively follow sharp fluctuations in systemic arterial pressure, constriction of arteries also follows direct application of epinephrine or stimulation of the cervical sympathetic nerves, whereas dilatation follows stimulation of the vagus. Evidence of a quantitative nature has been obtained that the circulation of the mammalian brain is controlled in part by cerebral vasomotor nerves.

Arkansas Medical Society Journal, Little Rock

25: 1-20 (June) 1928

Histopathology and Treatment of Cervicitis. D. Gann, Jr., Little Rock.—p. 1.
Mortality in Appendicitis: Its Causes and Prevention. A. F. Hoge, Fort Smith.—p. 5.
Simple Colitis. P. A. Rhinehart, Little Rock.—p. 10.

Canadian M. Association Journal, Montreal

18: 651-778 (June) 1928

Intestinal Diseases. T. R. Brown, Baltimore.—p. 651.
Diverticulosis of Urinary Bladder. E. J. Boardman, St. Boniface, Man.—p. 661.
Chronic Gallbladder. J. B. Deaver, Philadelphia.—p. 666.
*Pernicious Anemia: IV. Relationship Between Corpuscular Hemoglobin and Chloride Content. A. T. Cameron and M. E. Foster, Winnipeg, Man.—p. 673.
Hospitalization in Pernicious Anemia. E. L. Pope, Edmonton, Alta.—p. 677.
Therapeutically Active Principle Fraction of Crude Coal Tar. W. R. Jaffrey, Hamilton, Ont.—p. 680.
*Occurrence of Raised Basal Metabolic Rate in New Growth Without Hyperthyroidism. E. H. Mason, Montreal.—p. 681.
Relation of Department of Public Health to Profession. H. McPhedran, Toronto.—p. 683.
Uses and Abuses of Roentgen Rays. T. L. Gray, St. Thomas, Ont.—p. 686.
Masked Mastoiditis in Children. F. A. Macneil, Winnipeg, Man.—p. 688.
Case of Gas Gangrene. H. W. McGill, Calgary, Alta.—p. 692.
Ascariasis: Factor in Diagnosis and Treatment. F. J. Murray, Hillsboro, N. S.—p. 694.
Periodic Health Examinations. C. J. Tidmarsh, Montreal.—p. 697.
*Effect of Calcium, Potassium and Sodium Chloride and Potassium and Sodium Citrate in Cases of Delayed Healing. W. L. T. Addison, Toronto.—p. 700.
Supplementary Treatment of Operative Toxic Goiter Patient. W. E. Johnston, Detroit.—p. 703.
Conservative Surgery in Extensive Trauma of Limbs. A. Bellerose, Montreal.—p. 707.
Laryngeal Carcinoma. A. E. Lundon, Montreal.—p. 708.
Ectopic Pregnancy with Decidual Cast. C. C. Gurd, Montreal.—p. 710.
Parkinson's Syndrome as Sequel of Typhoid. E. S. Mills, Montreal.—p. 710.
Abnormally Large Infant. W. R. L. Gunn, Fort Frances, Ont.—p. 711.
Tuberculosis: C. H. Vrooman, Vancouver, B. C.—p. 725.
Treatment of Veterans. R. Millar, Ottawa, Ont.—p. 733.

Hemoglobin and Chloride Content of Erythrocytes in Pernicious Anemia.—Cameron and Foster assert that in pernicious anemia the hemoglobin content of a given volume of red blood corpuscles is invariably above the average normal value, and usually much above this value. On the other hand, the chloride content is almost always below the average normal value, suggesting that a causal relationship may exist between these two constituents. In the secondary anemias, the chloride content is usually above the average normal value, but all variations of hemoglobin value are found. In the single case of anemia from *Diphyllobothrium latum* high chloride and very low hemoglobin values were found.

Increased Metabolism Rate in Melanosarcoma of Liver.—A case of melanosarcoma with extensive involvement of the liver which showed a consistently elevated basal metabolic rate is reported by Mason. This increased oxygen consumption was independent of any alteration in the pulse rate. There was no evidence of any thyroid disorder.

Effect of Earthy Salts on Healing.—Addison states that calcium chloride not only exaggerates phagocytosis toward bacteria but accelerates the phagocytosis toward dead tissue and accelerates the regeneration of tissue (granulation tissue). The potassium salts greatly accelerate the regeneration of granulation tissue and maintain the vitality of the endothelial and fibrous tissue. Increase of the sodium salts inhibited regeneration of the tissues in one case, and in another actually caused the breaking down of the granulations already formed and the breaking down of well established scar tissue to form a new ulcer.

Colorado Medicine, Denver

25: 165-216 (June) 1928

*Angiosarcoma of Tongue. L. Freeman, Denver.—p. 167.
*New Type of Pin for Use in Open Reduction of Fractures. E. F. Dean, Denver.—p. 169.
Teaching Suggestion of Cancer Problem. C. F. Hegner, Denver.—p. 171.
Genito-Urinary Symptoms in Acute Appendicitis. G. B. Packard, Jr., Denver.—p. 172.
Transperitoneal Prostatectomy. J. B. Davis, Denver.—p. 173.
Efficiency of Measures for Prevention of Static Spark. W. B. Draper, Denver.—p. 174.
Roentgen-Ray Therapy. J. L. Harvey, Denver.—p. 176.
Milk Injections in Ophthalmology. M. Black, Denver.—p. 177.
Early Treatment of Strabismus. W. C. Finnoff, Denver.—p. 178.
"Postinfluenzal Debility." C. N. Meader and N. A. Stark, Denver.—p. 180.
Cholesteatoma of Nasal Accessory Sinuses Involving Orbit: Case. F. R. Spencer, Denver.—p. 183.
Brief Summary of Activities of Mobile Clinic of State Psychopathic Hospital. F. G. Ebaugh and G. S. Johnson, Denver.—p. 184.
Sterility: Its Causes. C. B. Ingraham, Denver.—p. 188.
Borderline Pelvis. F. H. Cary, Denver.—p. 192.
Malignant Diseases Frequently Unrecognized on Account of Their Hidden Origins. D. P. Seecof, Denver.—p. 194.
Case of Coccidioidal Granuloma. N. A. Stark and F. E. Becker, Denver.—p. 196.
Brief Outline of Heliotherapy from Surgical Standpoint. S. F. Jones and C. E. Sevier, Denver.—p. 202.
Arsphenamine Reactions. G. P. Lingenfelter and J. G. Hutton, Denver.—p. 203.
Brodie's Abscess: Case. F. E. Rogers, Denver.—p. 205.
Hemiplegia of Vascular Origin with Thrombus of Central Retinal Artery. G. A. Moleen, Denver.—p. 208.
Rabies in Denver: Three Cases. E. R. Mugrage, Denver.—p. 210.
Occult Rheumatism: Case. C. T. Burnett, Denver.—p. 212.

Angiosarcoma of Tongue.—Freeman reports a case of angiosarcoma of the tongue in a boy, aged 5. It had originated some two years previously, deep in the tissues of the middle third of the right side of the organ, and had gradually enlarged until it occupied almost the entire mouth, rendering swallowing difficult and articulation impossible. Its size approached that of a large walnut or a golf ball. At one point on its superior surface was an excrescence as large as the end of a finger, and at another point an unhealthy ulceration, which added much to the patient's inconvenience. He was obliged to hold his mouth partly open and saliva drooled from it more or less constantly. There were many enlarged cervical lymph nodes, especially in the submaxillary regions. In view of the appearance of the growth, the enlargement of the cervical glands and the cachectic look of the patient, a tentative diagnosis of sarcoma was made. The problem was to remove this large, vascular, nonpedunculated mass without undue hemorrhage. This was accomplished with the help of two long mattress needles. One of these was weaved in and out of the mucosa superficially across the top of the base of the tongue, while the other was similarly applied below, so as to grasp the organ between them. The ends of the needles, which projected from the corners of the mouth, were then bound together with ordinary rubber bands, one on each side, thus firmly compressing the intervening tissues and controlling the circulation. After the tourniquet was adjusted, the remainder of the operation was comparatively easy. The tumor, which was largely, but not completely, encapsulated, was partly enucleated and partly cut from its surroundings, leaving a large irregular defect on the right side and extending well over to the left. Fortunately the tongue was rather large, so that by careful stitching with chromic gut it was reconstructed into some sort of resemblance to the normal. No attempt was made to remove the large glandular masses from the neck, and the hypertrophied tonsils were not interfered with. When the boy left the hospital, at the end of about two weeks, he was in reasonably good condition, outside of a swollen neck and tongue, which was somewhat uneven in contour and not entirely healed. The pathologic report was angiosarcoma. A little over a year after the operation the boy was not only alive but in excellent condition. The tongue, although badly scarred and somewhat deformed, was equal to all his requirements, and he could talk fluently. The glandular swellings in the neck had disappeared, except for some small nodes in the submaxillary regions, which could be accounted for by the enlarged tonsils. No recurrence of the tumor could be detected anywhere.

New Pin for Fracture Reduction.—The new type of pin presented by Dean is made up of two parts, a drill and a screw. The drill is an integral part of the pin by an extension of the

pin downward from the screw of one-fourth inch, this part being cut into the proper sized drill to create a hole with the screw above, the screw portion following into the hole immediately after the hole has been drilled. The pin is set in a Stille drill and at one drilling is screwed into the bone and remains there until finally removed at the proper time. This pin eliminates the preliminary step of separate drilling and accomplishes the drilling of the hole and setting of the pin at the same time. It cuts the procedure of setting the pins about half in time and work; lessens the chances of infection, and does not leave any dead space between the end of the pin and the bottom of the hole. Removal of the pin can be accomplished easily by the reverse method of putting it in. This pin does not require the use of a wrench or clock key to be put into place, and is easily drilled in by a Stille drill.

Georgia M. Association Journal, Atlanta

17: 189-233 (May) 1928

Modern Medicine. W. A. Mulherin, Augusta.—p. 189.
Deleterious Effects of Indiscriminate Use of Thyroid Preparations in Obesity: Case. W. W. Daniel, Atlanta.—p. 192.
Obstructions of Ureters. J. L. Garrard, Rome.—p. 194.
Prevention and Treatment of Undernourishment in Childhood. I. M Lucas, Albany.—p. 196.
Modern Management of Pneumonia: Fourteen Cases. H. I. Reynolds, Athens.—p. 199.
Home Treatment in Pulmonary Tuberculosis. C. H. Holmes, Atlanta.—p. 203.
Intraligamentous Pregnancy: Case. O. R. Thompson, Macon.—p. 206.
Child Guidance as Factor in Psychiatric Problems. W. W. Young, Atlanta.—p. 208.
Studies on Wassermann Test. P. Eaton, F. L. Damren, Augusta, and E. L. Webb, Atlanta.—p. 210.
Problem in Chest Diagnosis. E. A. Bancker, Atlanta.—p. 213.

Johns Hopkins Hospital Bulletin, Baltimore

42: 319-398 (June) 1928

*Experimental Syphilis: VIII. Localization of Syphilitic Lesions in Inflamed Areas. A. M. Chesney, T. B. Turner and C. R. L. Halley, Baltimore.—p. 319.
Tubo-Uterine Junction in Various Animals. F. C. Lee, Baltimore.—p. 335.
Surface Tension of Human Blood Under Normal and Pathologic Conditions. E. G. Nicholls, Baltimore.—p. 358.

Experimental Syphilis.—Experiments made by Chesney et al. show clearly the susceptibility of recently healed and granulating wounds of the rabbit to infection with virulent strains of *Spirochaeta pallida* introduced either into the testis or directly into the circulation. This susceptibility seems to be quite as marked toward syphilitic virus coming from within as toward that introduced from without. The case histories indicate that the same state of affairs obtains in human beings.

Journal of Clinical Investigation, Baltimore

5: 521-643 (June 20) 1928

*Influence of Diet, High in Butter Fat, on Growth, Blood Formation and Blood Destruction. G. L. Muller, Boston.—p. 521.
*New Procedure for Determining Blood Sedimentation Rates. E. D. Plass, Iowa City, and M. D. Rourke, Boston.—p. 531.
Blood Composition of Animals Under Pathologic Conditions: I. Bronchopneumonia. A. A. Horvath and R. B. Little, Princeton, N. J.—p. 541.
*Chemical Mechanism of Hydrochloric Acid Secretion: I. Electrolyte Variations in Human Gastric Juice. H. A. Bulger, C. M. Stroud and M. L. Heideman, St. Louis.—p. 547.
Id.: II. Blood Passing Through Stomach of Dogs. H. A. Bulger, D. Allen and L. B. Harrison, St. Louis.—p. 561.
*Effect of Posture on Composition and Volume of Blood in Man. W. O. Thompson, P. K. Thompson and M. E. Dailey, Boston.—p. 573.
Effect of Posture on Velocity of Blood Flow in Man. W. O. Thompson, J. M. Alper and P. K. Thompson, Boston.—p. 605.
Chloride, Base and Nitrogen Content of Gastric Juice After Histamine Stimulation. W. S. Polland, A. M. Roberts and A. L. Bloomfield, San Francisco.—p. 611.

Influence of High Butter Fat Diet on Growth.—On a diet with 86.5 per cent of the caloric intake in the form of butter fat, Muller found that young rats grew to adult size and adult rats maintained and added to their weight. There was no evidence of injury to the blood-forming organs in either group. Dry, thin fur was observed in the adult group and in one of the growing rats. A scablike eruption was present in one of the adult rats. The caloric intake per hundred grams of live weight decreased with the duration of the experiment in both groups. The necropsy observations were normal except for increase of the abdominal fat and fatty infiltration of the liver in six out of seven cases studied. The bone marrow showed slight increase in fat cells with normal blood-forming constituents.

Determination of Blood Sedimentation Rate.—A new method is advanced by Plass and Rourke for the determination of sedimentation rates as a clinical procedure. The technic described obviates some difficulties inherent in the methods now in common use. Heparin is employed as the anticoagulant; special tubes are used giving a column of blood 100 mm. high, and results are expressed as the percentage of total possible settling (plasma volume percentage determined by centrifuging) which occurs during the one-hour period of observation. The results obtained on the blood of twenty-two normal men and of forty-five normal women are reported.

Electrolyte Variations in Gastric Juice.—According to Bulger et al., relatively little change in the concentration of chloride in human gastric fluid attends acid secretion, but, during secretion, the total base falls in proportion to the increase in acid. It appears that chloride ions and water leave the blood in the same relative concentration as in serum, acid being liberated by a retention of base. The concentration of phosphate in gastric contents is generally much greater than in serum. If stimulation does not result in hydrochloric acid secretion the concentration of phosphate as a rule increases. If much acid is produced, however, the concentration falls. The variation in phosphate may be attributed to fluctuations in the relative amounts of secretion from the mucous glands.

Effect of Posture on Blood.—The observations recorded by Thompson et al. show the importance of a rest period in the horizontal position for making blood volume and other comparative blood studies. In the standing position there occurs a net loss of approximately protein-free fluid from the blood. This seems to be due chiefly to an increase in capillary pressure. The loss amounts on the average to about 11 per cent of the total plasma volume, and is probably greatest where the filtration pressure is most increased, namely, in the lower extremities. The maximum fluid loss, which occurs in the standing position in from twenty to thirty minutes, is made up in about the same time in the recumbent position.

Journal of Laboratory & Clin. Medicine, St. Louis

13: 807-904 (June) 1928

*Pathology of Iron. F. Proescher and A. S. Arkush, Agnew, Calif.—p. 807.
*Erythrocyte Sedimentation Reaction. D. Townsend and H. B. Rogers, Johnson City, Tenn.—p. 819.
Remissions of Pernicious Anemia. R. Kegerreis, Chicago.—p. 827.
Hay-Fever and Asthma Caused by Pollen of Paper Mulberry (Papyrius Papyrifera Kuntze). H. S. Bernton, Washington, D. C.—p. 829.
Bacteriophage from Normal Stock Cultures. J. E. Blair, New York.—p. 837.
Morphine Tolerance: III. Effect of Cocaine on Dogs Before, During and After Habituation to Morphine. A. W. Downs, N. B. Eddy and J. P. Quigley, Edmonton, Alta.—p. 839.
Wassermann and Kahn Reactions. C. Nigg and N. P. Larsen, Honolulu, T. H.—p. 843.
Transmissible Lysis of Diphtheria and Diphtheria-Like Bacilli by Methyl Violet. J. E. Blair, New York.—p. 852.
*Serum Colorimetry and Other Evidence of Choleretic Action of Neocinchophen in Man. R. G. Spurling and E. E. Hartman, Louisville,—p. 854.
*Stability of Mercurochrome Solutions. G. F. Reddish, Baltimore.—p. 859.
Biliary Tract Disease: I. Colorimeter for Meltzer-Lyon Test. E. Hollander, New York.—p. 862.
Differentiation of Hepatic and Anhepatic Jaundice by Bile Salt Hemolysis. H. N. Sanford and J. S. Ashby, Chicago.—p. 867.
Combined Macroscopic and Microscopic Erythrocyte Fragility Technic (Modified Method of Simmel): Fragility in Normal Humans. T. R. Waugh and W. H. Chase, Montreal.—p. 872.
Identification of Culture Mediums by Use of Variously Colored Glass Beads. F. D. Weidman, Philadelphia.—p. 882.
Device for Obtaining Uniform Illumination of Copy for Photographic Reproduction. V. Seitz and W. J. Brownlow, Cleveland.—p. 882.
Improved Press for Supporting Copy to Be Photographically Reproduced. V. Seitz and W. J. Brownlow, Cleveland.—p. 885.

Pathology of Iron.—Proescher and Arkush suggest that iron may play a far greater rôle in pathologic and perhaps normal physiology than has hitherto been thought to be the case, thus calling for many new conceptions. After many years of neglect we may come back to the study of iron, appreciating in it a most active, important and understandable substance.

Erythrocyte Sedimentation Reaction in Tuberculosis.—Investigations made by Townsend and Rogers seem to prove

that the erythrocyte sedimentation reaction is not specific for tuberculosis; that a parallelism exists between the severity of the disease and the increase of the sedimentation speed; that as the condition of the patient improves, the sedimentation speed decreases, and that in some cases the phenomenon disappears before death.

Choleretic Action of Neocinchophen.—That neocinchophen increases the speed of excretion of the halogenated phenolphthalein by the liver is confirmed by Spurling and Hartman. The time required for the production of and the attainment of maximum density of the cholecystographic shadow is apparently shortened by the oral administration of 1 Gm. of neocinchophen by mouth one hour prior to the intravenous injection of the usual dose of sodium tetraiodophenolphthalein. The elimination from the blood stream of phenyltetraiodophenolphthalein sodium is hastened by the oral administration of 1 Gm. of neocinchophen. Some evidence is presented which would indicate that phenyltetraiodophenolphthalein in the usual dosage produces a mild toxic action on the liver cells.

Stability of Mercurochrome Solutions.—Reddish asserts that the bactericidal power and the toxicity of aqueous mercurochrome solution is not affected by keeping it at room temperature in a glass-stoppered bottle for at least five years.

Journal of Preventive Medicine, Baltimore

2: 191-272 (May) 1928

*Incidence of Clinical Diphtheria Among Family Contacts Subsequent to Discovery of Carriers. J. A. Doull, W. R. Stokes and G. F. McGinnes, Baltimore.—p. 191.
Study of So-Called Influenza in New York City in 1926. J. Duff and W. C. Noble, Jr., New York.—p. 205.
Results of Schick Tests in Tela, Honduras. W. H. Taliaferro, Chicago. —p. 213.
Bionomics of American Anophelines. M. F. Boyd and H. Foot, Edenton, N. C.—p. 219.
Dick Test and Immunization Against Scarlet Fever in Public Schools of Gary, Indiana. M. G. Smythe and O. B. Nesbit, Gary, Ind.—p. 243.
*Measles in Institutions for Children: III. 1925-1927. E. S. Godfrey, Jr., Albany, N. Y.—p. 251.

Incidence of Diphtheria Among Family Contacts.—On the basis of a study of the family contacts of 5,325 children found not to be carriers but attending the same schools as 937 carriers, 315 of whom harbored virulent organisms, Doull et al. conclude that the family contacts of carriers of diphtheria bacilli are exposed, within the first month after discovery, to a risk of clinical diphtheria measurably greater than that of a control population living in the same neighborhood, and otherwise considered comparable, but consisting of family contacts of school children from whom cultures were taken and found negative. This is precisely as would be expected from what is known of the epidemiology of the disease. The incidence among family contacts of carriers during this period is, however, only about one tenth that of those in similar association with recognized clinical cases. Family contacts of carriers of virulent bacilli seem to suffer a higher risk of attack than do those associated with carriers of bacilli of the so-called avirulent type, but there is some doubt whether the proof of this is statistically adequate. Nevertheless, diphtheria incidence in the latter group is, in turn, significantly higher than among the control families. This strongly suggests that those who harbor diphtheria bacilli classified as avirulent according to the usual tests may be of some importance in the spread of the disease. The brief period of increased incidence in the families of carriers is followed by a compensatory period of at least two months' duration in which the attack rate falls below that of the control group. This may be due to a lessened exposure as the result of a considerable proportion of the carriers gaining immunity to the carrier state, or to immunity acquired by other members of these families through contact with the carrier, or possibly to a combination of both these factors.

Control of Measles in Institution.—Godfrey is convinced that absolute prohibition of the admission of visitors and new inmates is the only reasonably sure method of preventing measles from gaining entrance into an institution for small children, when the disease is epidemic in the surrounding community. The most important factors in preventing mortality from measles are the proper management of contacts and the hygiene and nursing care of the sick. Convalescent serum is a valuable adjuvant but it cannot replace the prompt segregation of incipient cases and their subsequent hygienic care. The causes of a high fatality rate in measles are usually, if not always, to be found in the physical condition of the patient, in faults in his environment or in the care of the sick and rarely, if ever, in an inherent virulence of the disease itself. An outbreak of 155 cases with fourteen deaths in an institution for mental defectives is described. All of the deaths were among those having intelligence quotients of less than 25.

Medical Journal and Record, New York

127: 581-636 (June 6) 1928

Decimal Percentage Scale for Visual Losses. F. P. Lewis, Buffalo.—p. 581.
Dietetic Investigations of Edible Pure Cellulose. J. W. Frey, E. R. Harding and T. R. Helmbold, Pittsburgh.—p. 585.
Late Ectopic Pregnancy: Five Cases. H. Halsted, New York.—p. 589. (Concl.)
Urinary Extravasation at Varying Levels: Sixteen Cases. S. Wallenstein—p. 592. (Concl.)
Colic. J. W. Shuman, Los Angeles.—p. 595.
Cases of Protein Sensitization. M. A. Ramirez and F. Wise, New York. —p.597.
Medicine and Surgery of Lewis and Clark Expedition. L. L. Stanley, San Quentin, Calif.—p. 598. (Cont'd.)
Effect of Kalzan on Blood Calcium. B. S. Kahn, New York.—p. 600.
Artificial Pneumothorax in Pulmonary Tuberculosis. F. Neumann, New York.—p. 601.
Osteitis Tuberculosa Multiplex. R. H. Major and R. F. Gard, Kansas City, Kan.—p. 604.
Tuberculosis of Kidney. L. Vaccaro, Philadelphia.—p. 606.
Tuberculosis of Female Genital Tract. D. B. Allman, Atlantic City, N. J. —p. 609.
Tuberculosis of Myocardium. W. J. Carson, Milwaukee.—p. 610.
Tuberculous Duodenal Ulcer in Boy Fifteen Years of Age. H. Cohen, New York.—p. 611.
Case of Bilateral Renal Tuberculosis: Nephrectomy on Left Side with Apparent Recovery. A. Strachstein, New York.—p. 613.
Treatment of Chronic Pulmonary Tuberculosis. D. Kramer, Silver City, N. W.—p. 614.
Medical Life of Rabelais. D. W. Montgomery, San Francisco.—p. 620. (Concl.)

127: 637-696 (June 20) 1928

Management of Heart in Pneumonia. E. E. Cornwall, New York.—p. 637.
Some Factors in Prognosis of Heart Disease. J. G. Cross, Minneapolis. —p. 639.
Selection of Case for Pneumothorax. L. Schlenker, St. Louis.—p. 642.
Treatment of Chronic Pulmonary Tuberculosis. D. Kramer, Silver City, N. M.—p. 644.
Roentgen-Ray Signs of Perinephritic Abscess. L. J. Friedman, New York.—p. 648.
*Positive Diazo Reaction as Prognostic Sign in Nephritis. M. Greenwald and R. Aronoff, New York.—p. 651.
Diarrhea. J. W. Shuman, Los Angeles.—p. 653.
Medicine and Surgery of Lewis and Clark Expedition. L. L. Stanley, San Quentin, Calif.—p. 655. (Cont'd.)
Souvenir (Progress in Medicine). A. G. Hulett, East Orange, N. J. —p. 658.
Some Skin Manifestations of Systemic Disease. F. C. Combes, Jr., New York.—p. 659.
Treatment of Common Facial Dermatoses. O. L. Levin, New York.—p. 663.
Treatment of Certain Diseases of Skin. H. H. Bauckus, Buffalo.—p. 667.
Anaphylactic Dermatoses as Clinical Problem. M. Scholtz, Los Angeles, —p. 670.
Radium Emanation in Benign Uterine Affections. J. Muir, New York. —p. 675.
Children of Renaissance and Medicine. J. Wright, Pleasantville, N. Y. —p. 678.
Ideal Medical Museum. D. B. Delavan, New York.—p. 685.

Value of Diazo Reaction in Prognosis of Nephritis.—In twenty-five cases of uncomplicated nephritis and five cases of coma, some of which were of renal origin, and others from a variety of other causes, Greenwald and Aronoff found a positive diazo reaction. None of those patients recovered. Incidentally, the diazo reaction helped to differentiate nephritic from nonnephritic comas. These observations were verified in a number of cases by autopsies.

Michigan State Medical Society Journal, Grand Rapids

27: 317-436 (June) 1928

Responsibility of Practicing Physician in Medical Education. J. D. Bruce, Ann Arbor.—p. 317.
Regional Anesthesia as Applied to Urology. R. E. Cumming and C. C. Ames, Detroit.—p. 319.
Postoperative Complications. E. C. Cutler, Cleveland.—p. 325.
*Acute Inversion of Uterus. M. Burnell, Flint.—p. 335.
Status Lymphaticus. L. R. Himmelberger, Flint.—p. 337.

Jaundice. M. S. Chambers, Flint.—p. 339.
Infections of Lip. G. J. Curry, Flint.—p. 340.
Epidemic Encephalitis. A. B. Olsen, Battle Creek.—p. 341.
*Brain Hemorrhage. L. Dretzka, Detroit.—p. 344.
*Epidemic Encephalitis. I. L. Polozker, Detroit.—p. 347.
Tuberculous Tracheobronchial Adenitis. C. A. Ryan, Northville.—p. 350.
Local Anesthesia and Its Fatalities. O. McGillicuddy, Ann Arbor.—p. 362.
Medical Legislation in New York. W. H. Ross, Brentwood, N. Y.—p. 370.

Acute Inversion of Uterus.—Burnell reports the case of a woman of 23 who, just after spontaneous delivery of a full-term living child, had an inversion of the uterus. The placenta was attached to the fundal wall. The inversion was easily corrected manually. One year later, this course of events repeated itself. Four months after this happening, while the patient was carrying a heavy pail of coal, the uterus again became inverted, but reposition was impossible. The patient bled so profusely she was almost exsanguinated and in shock. Even under ether anesthesia all manual attempts at reduction failed. Reduction was finally accomplished by means of an anterior colpohysterotomy. Three and a half years later, the patient again delivered herself spontaneously in spite of a breech presentation, and immediately the uterus inverted itself. Manual reposition was easily done. The woman is in excellent health.

Incidence of Brain Hemorrhage.—Analyzing the summary of the principal causes of death in the registration area of the United States, Dretzka found that 87,064 deaths in 1925 resulted from cerebral hemorrhage, cerebral embolism and thrombosis. He reports six cases.

Treatment of Epidemic Encephalitis.—Polozker treated these cases with 1,000 cc. of warm (105 F.) Ringer's solution injected into the buttock or back, alternating on each side twice weekly. There were no ill effects from the treatment. Three patients (moderate cases) recovered almost completely; the tremor has disappeared; speech and writing are normal, and the gait is steady and firm. There is no salivation or perspiration. The maskface is hardly noticeable; the smile is normal. Two other patients (severe cases) who were bedridden and helpless are up and walking around, and appear to be very cheerful. One patient who slept constantly is up and vivacious, asking when the next injection is going to be given to him, whereas previously he was indifferent to the treatment. The four remaining patients were considerably benefited by the injections and feel very well.

Minnesota Medicine, St. Paul

11: 363-438 (June) 1928

Certain Relationships of Physician and Public. L. B. Wilson, Rochester.—p. 363.
Roentgenotherapy in Certain Types of Neuritis and Neuralgia. F. A. Ford, Rochester.—p. 368.
Operative Treatment of Fractures: Humeral Fractures. R. R. Cranmer and M. S. Sichel, Minneapolis.—p. 375.
Polycystic Kidney: Case. E. Bratrud, Warren.—p. 383.
Gradenigo's Syndrome. W. B. Stark, Rochester.—p. 388.
Ureteral Stricture in Female. L. M. Miles, St. Paul.—p. 390.
Bilateral Renal Lithiasis. M. Nordland, Minneapolis.—p. 402.
*Acquired Syphilis in Family Groups. P. A. O'Leary and M. W. Rubenstein, Rochester.—p. 406.
Lymphosarcoma: Case. H. R. Leland, Minneapolis.—p. 410.
*Esophageal Stricture of Unusual Origin: Case. P. P. Vinson and W. R. Johnson, Rochester.—p. 411.
Spontaneous Subarachnoid Hemorrhage: Case. G. R. Kamman, St. Paul.—p. 411.
Acute Febrile Anemia: Case. L. A. Steffens, Red Wing.—p. 412.

Acquired Syphilis in Family Groups.—In a study undertaken at the Mayo Clinic by O'Leary and Rubenstein of a group of 100 patients with neurosyphilis, it was found that in 22 per cent the husband and wife showed evidence of neurosyphilis. It was also noted in that survey that 44 per cent of the husbands had neurosyphilis in one form or another while the wives had latent syphilis, and, also, that only 14 per cent of the wives manifested serologic or neurologic evidence of neurosyphilis while the husbands had the latent form of the disease. It was then decided to investigate clinically a group of relatives to note the influence of familial characteristics. Thirteen families were included in the grouping. There were four groups of sisters; two of brothers; two of brother and sister; two of mother and son; two of mother and daughter; one group of father and son, and one of mother, son and daughter. In seven (53.8 per cent) of the families more than one member had neurosyphilis. The families comprised two families of two sisters each; one family of two brothers; one family of mother and son; one family of father and son; one family of mother and daughter, and one family of mother, daughter and son. In two of the families neither member manifested serologic or clinical signs of neurosyphilis. The families comprised one family of two sisters, and one family of mother and daughter. In four families one member had neurosyphilis and the other had not. The families comprised one family of two sisters; one family of two brothers, and two families of brother and sister each. A detailed report is made of four families.

Spontaneous Rupture of Esophagus.—Vinson and Johnson report the case of a man who, while lifting a couch, sustained a rupture of the lower part of the esophagus. It healed, causing a stricture, and the man could not swallow anything. Through a gastrostomy opening the stricture was dilated, so that he could swallow solid food.

Missouri State M. Association Journal, St. Louis

25: 241-288 (June) 1928

Tuberculosis Crusaders. H. H. Bell, St. Louis.—p. 241.
Medical Aspects of Social Hygiene. T. Parran, Jr., Washington, D. C.—p. 245.
*Acute Anterior Poliomyelitis: Cause and Prevention. M. Pitzman, St. Louis.—p. 249.
*Inoperable Multiple Venous Circumscribed Cavernous Hemangioma of Tongue. O. J. Dixon, Kansas City, Mo.—p. 257.
Industrial Visual Efficiency Loss. W. L. Small, Kansas City, Mo.—p. 258.
Painful Back. A. O'Reilly, St. Louis.—p. 261.
*Effects of Feeding Bone Marrow in Myelogenous Leukemia. J. P. Costello, St. Louis.—p. 267.
Erysipelas. W. L. Gist and P. F. Stookey, Kansas City.—p. 268.

Cause of Acute Anterior Poliomyelitis.—Pitzman's hypothesis is that cows, when short of other greens, will eat enough jimson weed, or other marsh loving poisonous plants, to cause their milk, when taken in sufficient quantity, to produce the disease known as acute anterior poliomyelitis.

Cavernous Hemangioma of Tongue.—In Dixon's patient the entire left half of the tongue was a bluish purple color and about twice the size of the right half. This swelling was exactly unilateral. There was also a purplish discoloration of the left posterior pillar and the upper third of the left tonsil. There was a bluish spider-web-like area on the buccal mucous membrane of the left cheek. When the jaws were closed tightly and there was forced closed expiration, a soft, deep, nonpulsating, bluish mass appeared at the angle of the left jaw and there was also a distinct swelling of the left external jugular vein, just above the clavicle. These quickly disappeared on expiration.

Feeding Bone Marrow in Myelogenous Leukemia.—Costello reports a case of myelogenous leukemia in a child, aged 9 months, that responded in a remarkable manner to the administration of bone marrow. The yellow marrow is taken while fresh and agitated in water, equal amounts of the two constituents being used. One ounce of the mixture with an equal amount of orange juice is given every three hours.

Nebraska State M. Journal, Norfolk

13: 201-240 (June) 1928

Medicine and Commercialism. B. R. McGrath, Grand Island.—p. 201.
*Treatment of Proliferative Arthritis with Ammonium Ortho-Iodoxybenzoate. A. L. Smith, Lincoln.—p. 204.
Positive Indications for Skeletal Traction in Fractures of Femur. H. F. Johnson, Omaha.—p. 209.
Technic for Ideal Skin Graft: Extensive Lymphangioma Pigmentosa Verrucosa. C. Emerson, Lincoln.—p. 214.
Abruptio Placentae: Four Cases. F. P. Murphy, Omaha.—p. 217.
Early Diagnosis of Tuberculosis in Children. H. M. Jahr, Omaha.—p. 220.
*Lymphosarcoma: Five Cases. B. C. Russum and F. A. Neisius, Omaha.—p. 223.
*Surgical Transplantation of Endometrial Tissue from Uterus into Abdominal Wall. C. A. Roeder, Omaha.—p. 226.
Reflections on Year's Work. F. M. Conlin, Omaha.—p. 227.

Treatment of Arthritis with Ammonium Ortho-Iodoxybenzoate.—Sixty-nine patients with proliferative arthritis treated with ammonium ortho-iodoxybenzoate injected intra-

venously are reported on by Smith. One patient received 10 Gm. by rectum and one the same amount by mouth without any change in the condition, but both improved later by the intravenous treatment. One patient with an arthritis deformans of eighteen years' standing was given seventeen 1 Gm. injections with great improvement. Two patients with degenerative arthritis were given six injections of 1 Gm., but no improvement was noted in either.

Lymphosarcoma.—The five cases reported by Russum and Neisius differed from other cases observed clinically and pathologically in the following details: There was a principal tumor, made up of massed glands. There were visceral tumors in three of the five cases. The tumors formed coalescing masses in all cases. The growth was clinically rapid in three patients, and slow in two. The mediastinum was involved in four patients, and cachexia was present in three. There was a moderate leukocytosis in three patients. Histologically, there was unrestrained hyperplasia of the lymphoid elements, with extension through the gland capsule in all cases. There were restraining hyperplasia of the endothelial elements, fine fibrosis in four, and giant forms of endothelial elements in one. There were gross necroses in two cases, and fine necroses in four cases.

Surgical Transplantation of Endometrial Tissue.—In the case reported by Roeder, the right tube and a cystic tumor of the right ovary were removed in 1926, and the fundus of the uterus was attached to the anterior abdominal wall. The patient presented herself to Roeder on account of severe pain starting the day before and lasting through menstruation. Since the uterine suspension in 1926 she had noticed, during this time, a painful swelling about 4 cm. in diameter just beneath and to the left of the median laparotomy scar. This "menstrual tumor" was first noticed about six months following the uterine fixation and gradually enlarged, becoming purplish during each period. The intra-uterine menstrual pain was of the same intensity and duration as in the past, but the pain in the abdominal wall in the region of this swelling was of greater severity. This periodically enlarging mass in the abdominal wall was easily diagnosed as transplanted uterine endometrial tissue. During the removal of this mass, a silk suture was encountered extending inwardly to and through the wall of the uterus. The tract surrounding the suture was lined by tissue of the same appearance as that found lining the uterine cavity and in the tumor lying on the aponeurosis. This case suggests the possibility of embryonic transplants of endometrial tissue in the uterine wall which had caused painful menstruations. Examination of the wall of the uterus near the area where the silk suture was found showed adenomatous tissue of quite likely endometrial origin.

New England Journal of Medicine, Boston

198: 783-838 (May 31) 1928

*Redundant Colon. F. W. White, Boston.—p. 783.
Rabies: Treatment of Wounds and Prevention of Disease. M. J. Rosenau, Boston.—p. 787.
Bilateral Cavernous Sinus Thrombosis: Nasal and Eyelid Infection. J. E. Quincy, Boston.—p. 791.
Mortality in Some of Common Surgical Conditions. A. M. Willis, Richmond, Va.—p. 794.
Vincent's Infection: Apparent Outbreak at Smith College. K. Pardee, New York, F. F. Gordon, Northampton, Mass., and C. Riley, Washington, D. C.—p. 796.

198: 840-876 (June 7) 1928

Active Immunization Against Diphtheria. C. L. Scamman, Boston, and B. White, Jamaica Plain, Mass.—p. 840.
Colling's Method of Relieving Certain Prostatic Obstructions. P. N. Papas, Boston.—p. 842.
What is Wrong with Medical Profession? H. A. Streeter, Manchester, N. H.—p. 857.

Redundant Colon.—White believes that the redundant colon is frequently overlooked, and that early wrong diagnoses are the rule. It is more common in men than in women, and in persons of vigorous physique. The commonest symptoms are constipation, abdominal distress or pain, flatulence and distention. About one third of the patients do not have definite symptoms. It is important to remember the redundant colon when general abdominal symptoms or painful attacks are present in order to avoid wrong diagnoses of other lesions which produce similar symptoms. No other disease causes such peculiar variable deformities of the stomach, except diaphragmatic hernia. A barium enema shows the lesions best, and if the enema is only occasionally used, some cases will be missed. Medical treatment will cause great improvement in the majority of cases.

New Jersey M. Society Journal, Orange

25: 397-438 (June) 1928

Indigestion as Early Symptom of Organic Disease. G. H. Lathrope, Newark.—p. 397.
Poliomyelitis, Bulbar Type: Five Cases. S. A. Levinsohn and H. Wassing, Paterson.—p. 401.
Postoperative Care of Perineorraphies. N. N. Forney, Milltown.—p. 404.
Chronic Arthritis. B. F. Buzby, Camden.—p. 405.
Focal Infection in Arthritis. T. M. Kain, Camden.—p. 407.
Gonococcus Arthritis. D. F. Bentley, Camden.—p. 410.
Tuberculous Otitis Media. J. Pennington, Atlantic City.—p. 411.
Early Diagnosis of Acute Mastoiditis. E. R. Hirst, Camden.—p. 412.

New Orleans M. Surgical Journal

80: 783-866 (June) 1928

Medical Facts, Fads and Fancies. A. A. Herold, Shreveport, La.—p. 783.
Leadership in Medicine. W. C. Rucker, New Orleans.—p. 790.
Rabies: Prevention. G. H. Hauser, New Orleans.—p. 794.
Carbuncle: Of Upper Lip. C. A. Sheely, Gulfport, Miss.—p. 807.
In What Way Can Internist or General Practitioner Help in Campaign Against Cancer? J. C. Bloodgood, Baltimore.—p. 809.
Mental Disorders and Society. F. F. Young, Covington, La.—p. 816.
Angina Pectoris and Coronary Thrombosis. W. J. Norfleet, Shreveport, La.—p. 820.
Etiology of Essential Hypertension. O. S. Warr, Memphis, Tenn.—p. 822.
Prognosis in Kidney Disease. L. S. Lippincott, Vicksburg, Miss.—p. 826.
Mirror Transposition of Viscera Associated with Acute Appendicitis. J. H. Rush, H. L. Rush and L. V. Rush, Meridian, Miss.—p. 829.
Treatment of Certain Types of Epidermophytosis by Means of Carbol-Fuchsin Paint. A. Castellani, New Orleans.—p. 833.

New York State J. Medicine, New York

28: 707-770 (June 15) 1928

Legislative Activities in New York State. W. H. Ross, Brentwood.—p. 707.
Congenital Dislocation of Hip and Talipes: Orthopedic Treatment. P. C. Colonna, New York.—p. 713.
*Treatment for Morning Sickness. D. A. Calhoun, Troy.—p. 715.
*Diet in Heart Disease: Rôle of High Carbohydrate Feeding. A. S. Hyman, New York, and M. Protas, Washington, D. C.—p. 716.
*Pituitary Extract in Pyelitis. J. A. Miller, New York.—p. 720.
Association of Diseases. H. T. Hyman and L. Kessel, New York.—p. 722.
Treatment of Certain Forms of Urticaria. E. E. Marcovici, New York.—p. 724.
*T Wave in Electrocardiogram. S. Frucht, New York.—p. 726.
Latent Paranasal Sinus Infections. W. L. Gatewood, New York.—p. 731.
Wassermann Test in Diagnosis and Treatment of Syphilis. A. Sayer, New York.—p. 734.

Treatment of Morning Sickness.—In mild cases after the patient is up and about, Calhoun gives a cleansing enema of soap suds with thorough evacuation. Following this a retention enema of a 5 per cent dextrose solution is given. Eight ounces of the mixture is used and is to be retained throughout the day. During the day the patient only takes small quantities of fluid every two hours. A 10 per cent solution of lactose, taken in small quantities, is advantageous at this time. At bed time the retention enema is repeated as in the morning. One tablet of phenobarbital sodium is given at night to insure rest and quiet. Calhoun says that two or three days of this treatment suffices in practically all cases to cause a complete cessation of all nausea and vomiting.

Carbohydrate Diet in Heart Disease.—Experimental and clinical evidence tend to indicate that the weakened and undernourished myocardium is greatly benefited by carbohydrate ingestion. Hyman and Protas have devised six standardized diets which contain relatively low amounts of fats and protein but increasing amounts of carbohydrates. The carbohydrates are given in the forms least likely to produce flatulence and gastric distress. The inulin content of artichokes is recommended for its almost specific effect on the undernourished myocardium. The protein levels have been kept well within the limits demanded by Du Bois, Chittenden and Altnow. These diets are thus equally suitable for patients suffering from acute renal disease. The first three diets are suitable for hospitalized or bed patients, the latter three for convalescent and ambulatory patients.

Pituitary Extract in Pyelitis.—In obstretric cases complicated by pyelitis in the past ten years, Miller has noticed that

when pituitary extract was used, pyelitis never occurred or recurred as a postpartum condition, whereas prior to its use the complication cropped up with annoying frequency. Secondly, when pyelitis existed before delivery, the use of pituitary extract for inducing labor, or as a routine post partum, effected an immediate and almost miraculous cure. Nine patients with old recurrent pyelitis were given three injections of 1 cc. of pituitary extract at intervals of five days. Several months have elapsed since this treatment was given and the pyelitis has not recurred thus far in any of them. Miller suggests that this treatment be tried also by pediatricians in the cases of pyelitis of infancy.

Nature of T Wave in Electrocardiogram.—Frucht concludes from his studies that the T wave in the electrocardiogram is the graphic representation of the final electrical activity of the ventricular musculature and pictures in composite form the differences in electrical potential developed in the ventricles. The T wave is separate, distinct and independent of the Q R S complex. The direction of the T wave gives a valuable clue to the condition of the ventricular musculature and may be employed for the localization of the region affected. Successive alterations of the T wave give an insight into the progress of the disease. It is an invaluable aid in cardiac prognosis. The appearance of an inverted T wave, especially in lead 1, is a danger signal in disease of the heart.

Oklahoma State M. Association Journal, Muskogee

21: 137-180 (June) 1928

Surgery and Gynecology. L. M. Sackett, Oklahoma City.—p. 140.
Obstetrics and Pediatrics. G. R. Osborn, Tulsa.—p. 142.
Relation of Urology to Physician and Surgeon. E. S. Sullivan, Oklahoma City.—p. 143.
History of Code of Medical Ethics. W. S. Mason, Claremore.—p. 145.
Chronic Otorrhea. A. C. McFarling, Shawnee.—p. 147.

Public Health Journal, Toronto

19: 251-300 (June) 1928

Summer Camp Sanitation. A. E. Berry, Toronto.—p. 251.
Department of Public Health of Saskatchewan. F. C. Middleton, Regina, Sask.—p. 255.
Falling Birth Rate. A. C. Jost, Halifax, N. S.—p. 270.
Malta Fever in Canada: Cases. N. M. Harris, Ottawa, Ont., and Others.—p. 272.
Undulant (Malta) Fever: Three Cases. D. L. MacLean, and Others, Toronto.—p. 274.

Public Health Reports, Washington, D. C.

43: 1321-1383 (June 1) 1928

*Loosely Bound Sulphur in Pituitary Extracts. M. X. Sullivan and M. I. Smith, Washington, D. C.—p. 1334.

Loosely Bound Sulphur in Pituitary Extracts.—Tests made by Sullivan and Smith on extracts of the posterior pituitary lobe showed that they contained highly reactive sulphur (reactive in the presence of normal sodium hydroxide), while extracts of the anterior lobe did not. Secondly, certain extracts of the posterior lobe, which were found to have little or no physiologic activity, were negative in the lead sulphide test. Whether this agreement is coincidental or is an indication that the physiologic activity of the posterior pituitary is tied up with the presence of highly reactive sulphur compounds must remain for further investigation. In either case the test for highly reactive sulphur should be useful in the isolation and purification of the active principles.

43: 1385-1495 (June 8) 1928

*Study of Blacktongue-Preventive Action of Sixteen Foodstuffs: Identity of Blacktongue of Dogs and Pellagra of Man. J. Goldberger and Others, Washington, D. C.—p. 1385.

Blacktongue Preventive Foodstuffs.—So far as these studies by Goldberger et al. have gone, the foodstuffs that appear to be good sources of the blacktongue preventive also appear to be good sources of the pellagra preventive; those that appear to be poor sources of, or lacking in, the blacktongue preventive likewise appear to be poor sources of, or lacking in, the pellagra preventive. In view of the available evidence as a whole, it would seem highly probable, if not certain, that experimental blacktongue and pellegra are essentially identical conditions, and thus that the preventive of blacktongue is identical with the pellagra preventive, or factor P-P. On the basis of the indications afforded by the test in the dog, liver, salmon and egg yolk are recommended for use in the treatment and prevention of pellagra in man.

Tenessee State M. Association Journal, Nashville

20: 423-478 (April) 1928

Cancer. B. Malone, Memphis.—p. 423.
Constipation. K. S. Howlett, Franklin.—p. 431.

21: 1-40 (May) 1928

Liver. S. R. Roberts, Atlanta, Ga.—p. 1.
Heart Failure. J. O. Manier, Nashville.—p. 6.
Periodic Health Examinations. E. R. Zemp, Knoxville.—p. 14.
Morawitz Classification of Anemias. W. C. Colbert, Memphis.—p. 19.
Urinary Infections. H. Douglas, Nashville.—p. 25.

Texas State J. Medicine, Fort Worth

24: 1-66 (May) 1928

Sex Endocrines. S. Frankel, Vienna.—p. 10.
Avulsion of Phrenic Nerve. F. P. Miller, El Paso.—p. 15.
Mental Aspects of Tuberculosis. K. A. Menninger, Topeka, Kan.—p. 19.
Pellagra. V. M. Longmire, Temple.—p. 20.
Arteriosclerosis. I. L. Van Zandt, Fort Worth.—p. 23.
Chronic Radiodermatitis. J. C. Michael, Houston.—p. 26.
Carrier in Typhoid Epidemics. W. A. Davis, Fort Worth.—p. 31.
Primary Myopia: 500 Cases. F. H. Newton, Dallas.—p. 33.
Glaucoma in Myopia. C. P. Schenck, Fort Worth.—p. 36.
Dental Roentgen-Ray Observations. S. D. Whitten, Greenville.—p. 39.

U. S. Veterans' Bureau M. Bull., Washington, D. C.

4: 503-580 (June) 1928

Basal Lesions in Pulmonary Tuberculosis: Seven Cases. W. A. Colton.—p. 503.
Pulmonary Hydatid Cyst with Hysterical Manifestations. B. Apfelberg.—p. 512.
Early Diagnosis as Influenced by Physical Continuity of Various Necessary Departments. W. B. Swackhamer.—p. 518.
Acute Phase of Schizophrenia. J. C. Hudgens.—p. 521.
*Foci of Infection in Infectious Arthritis. S. Bockoven.—p. 524.
Constant 2:1 Heart Block with Mild Stokes-Adams Syndrome. M. T. Moorehead.—p. 526.
Pernicious Anemia: Treatment. D. L. Liberman.—p. 530.
Nephritis in Far Advanced Pulmonary Tuberculosis. J. A. René.—p. 535.
Psychometric Methods. G. V. N. Dearborn.—p. 539. (Cont'd.)
Bronchial Asthma Relieved by Removal of Oral Focal Infection. I. W. Whitaker.—p. 545.
Oral Infection in Mental Patients. C. R. Hillier.—p. 547.
*Impaction of Bran in Gastro-Intestinal Canal. E. J. Butzke and Others.—p. 549.
Mental Hygiene. D. M. Gardner.—p. 562.
Therapeutic Occupation for Psychotics. A. L. Roberts.—p. 567.
Occupational Therapy Helped to Win Fight. E. M. Cates.—p. 568.

Foci of Infection in Infectious Arthritis.—In 119 cases analyzed by Bockoven, one focus of infection was found in sixty; two foci in forty; more than two foci in twenty-one, and no foci in eighteen. Pyorrhea was present in fifty-five cases, dental abscess in forty-six, gingivitis in thirty-five, tonsillitis in twenty-six, prostatitis in twelve, constipation in eight, appendicitis in six, and cholecystitis in five. Sinusitis, infected adenoid tissue, colitis and extensive dermatitis were each found in four cases.

Impacted Bran in Gastro-Intestinal Tract.—Butzke et al. report two cases in which impacted bran caused dilatation of the sigmoid and rectum. Patients who eat considerable bran should be cautioned in regard to the possibility of impaction and irritation of the bowels.

Virginia Medical Monthly, Richmond

55: 157-224 (June) 1928

Tumors of Bladder. A. I. Dodson, Richmond.—p. 157.
Ureteral Spasm and Stricture. L. D. Keyser, Roanoke.—p. 160.
Chronic Pyuria in Children: Cases. J. H. Neff, University.—p. 165.
Pyuria in Infancy and Childhood: Thirteen Cases. W. A. McGee, Richmond.—p. 171.
Disease of Thyroid. R. L. Payne, Norfolk.—p. 180.
High Tone Hearing Defects. M. L. Breitstein, Baltimore.—p. 183.
Cholecystography: Valuable Diagnostic Method. N. M. Canter, Harrisonburg.—p. 188.
Lewis Webb Chamberlayne (1798-1854). W. B. Blanton, Richmond.—p. 192.
"S. O. S. Bellyache." J. E. Rawls, Suffolk.—p. 195.
Case of Unilateral Deafness Without Vestibular Involvement Caused by Mumps. E. U. Wallerstein, Richmond.—p. 197.
Malaria Control for Cities and Counties. L. L. Williams, Jr., Richmond.—p. 198.

West Virginia Medical Journal, Charleston

24: 261-312 (June) 1928

Treatment of Diabetes. J. S. Hackney, Uniontown, Pa.—p. 267.
Pathology of Endemic Goiter and Iodine Question. H. S. Keister, Fairmont.—p. 271.

Intestinal Tuberculosis. F. A. Brown, Hopemont.—p. 274.
Toxemia of Early Pregnancy. J. R. Bloss, Huntington.—p. 279.
Pellagra: Two Cases. D. A. MacGregor, Wheeling.—p. 280.
Traumatic Rupture of Spleen: Case. R. K. Buford, Charleston.—p. 281.
Caudal Anesthesia. T. J. McBee, Morgantown.—p. 284.
Field of Hospital in Care of Industrial Workers. J. McClung, Richwood. —p. 288.

Wisconsin Medical Journal, Milwaukee

27: 253-300 (June) 1928

Nitrohydrochloric Acid in Treatment of Hay-Fever. H. Beckman, Milwaukee.—p. 253.
Urinary Tract Infection and Gallbladder Disease: Fourteen Cases. G. W. Carlson and E. F. McGrath, Appleton.—p. 256.
Progress of Scientific Medicine in China. P. F. Greene, Madison.—p. 259.
Follicular Hormone. L. A. Brouha, Liege, Belgium.—p. 262.
Diagnostic Problems. L. M. Warfield, Milwaukee.—p. 268.
Tuberculous Cerebrospinal Meningitis with Unusual Features. M. G. Masten, Madison.—p. 269.
Primary Pleurisy. O. Lotz, Milwaukee.—p. 271.
Newspapers Work for Health in Wisconsin: No Serum Does More for Public Health Than Printer's Ink. F. L. Holmes, Madison.—p. 288.
Physicians Making Increasing Use of Wisconsin Medical Library Extension Service. F. B. Van Zandt, Madison.—p. 293.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Actinotherapy, London

3: 41-60 (June) 1928

Treatment of Certain Common Eye Diseases in Young by General Ultraviolet Irradiation. I. Spiro.—p. 43.
Infra-Red Rays: Physical Bases and Therapeutic Uses. J. Saidman.—p. 46.
Ultraviolet Irradiation in Treatment of Varicose Ulcers. M. Weinbren. —p. 50.
Diathermy in Treatment of Urogenital Organs. C. A. Robinson.—p. 53.

British Medical Journal, London

1: 885-930 (May 26) 1928

Pulmonary Asbestosis in South Africa. F. W. Simson.—p. 885.
*Abdominal Pain as Exemplified in Acute Appendicitis. J. Morley.—p. 887.
Operation for Cure of Prolapse of Rectum in Female. F. J. McCann. —p. 890.
Spirit and Bipp Treatment. N. L. M. Reader.—p. 892.
*Atypical Case of Hyperglycemia in General Anesthesia. R. L. Mackay. —p. 892.
Rupture of Uterus Early in First Stage of Labor. G. Stapleton.—p. 893.
Promotion of Calcium Retention. O. Loew.—p. 894.
Pneumococcal Peritonitis During Puerperium: Recovery. H. F. Seymour.—p. 895.
Hemorrhage from Deep Epigastric Artery into Rectus Abdominis. D. MacLennan.—p. 895.
Tinea Interdigitalis Pedis. H. H. Skeoch.—p. 896.

Nature of Abdominal Pain.—The evolution of knowledge of the mechanism of abdominal pain is summarized by Morley. The initial central pain in acute appendicitis is a true splanchnic pain due to increased intra-appendicular tension. The localized right sided pain is due to irritation of the parietal peritoneum. Cutaneous hyperalgesia is too variable in its incidence to be of value in the diagnosis of acute appendicitis, and the mode of production of cutaneous hyperalgesia is discussed. Mackenzie's viscerosensory reflex theory is criticized. The mechanism of reflex muscular rigidity and the associated deep tenderness is considered. Mackenzie's visceromotor reflex theory is criticized, and the rôle of the parietal peritoneum emphasized, protective muscular rigidity being ascribed to a peritoneomuscular reflex.

Hyperglycemia in General Anesthesia.—In a case of gastric ulcer, hour-glass stomach and chronic appendicitis, Mackay did a partial gastrectomy, a gastro-enterostomy and a removal of the appendix under chloroform-ether mixtures anesthesia. Since shock was present, the patient received a rectal saline injection, containing 5 per cent of dextrose. Three hours and twenty minutes after the operation there was a hyperglycemia of 0.386 per cent but no glycosuria.

Indian Medical Research Memoirs, Calcutta

9: 1-175 (March) 1928

Incidence and Spread of Cholera in India: Forecasting and Control of Epidemics. L. Rogers.—p. 1.

Journal of Mental Science, London

74: 203-373 (April) 1928

Psychiatry and Science. G. V. N. Dearborn.—p. 203.
Type Psychology: Importance in Mental Hospital Practice. J. E. Nicole. —p. 223.
Formulation of Psychiatric Cases. A. MacNiven.—p. 238.
Some Points in Histology of Globus Pallidus. E. B. White.—p. 247.
*Mental Disorder in Cardiac Disease. C. F. Coombs.—p. 250.
Volvulus. F. C. Logan and J. A. A. Sang.—p. 259.
*Mongol: New Explanation. R. M. Clark.—p. 265.
Bacterial Change in Mental Disorder: Morgan's Bacillus. F. H. Stewart. —p. 269.
Treatment of General Paralysis by "Apyrexial" Malaria. F. H. Stewart. —p. 276.
Phenylethyl Barbituric Acid in Epilepsy. G. W. Mackay.—p. 277.
Id.: Complication. D. J. O'Connell.—p. 279.
Method of Nursing Helpless and Paralyzed. H. T. Kirkland.—p. 279.

Mental Disorder in Cardiac Disease.—According to Coombs, there is no evidence that cardiac disease can, unaided, cause insanity. There is reason to believe that mental disturbances can cause cardiac disorder, but whether these can go further and establish organic change appears uncertain. There are many morbid processes which affect both heart and brain, and thus account for many of the coincidences between cardiac disease and insanity.

Explanation of Mongolism.—In Clark's opinion, hyperthyroidism has been at work on the fetus that becomes a mongol. Thyroid fed to tadpoles causes protrusion of the eyes. It also causes metamorphosis to occur prematurely, so that it is possible to obtain diminutive frogs only one-tenth the length of normal frogs. Thyroid fed to axolotls increases metabolism by 35 per cent, body weight decreases and skeletal changes occur. Thyroid fed to pregnant bitches, rabbits and guinea-pigs causes injury and death of the fetus. Thyroid accelerates maturing of spermatoblasts, and in larger doses causes degeneration and death, with fatty changes and increase in cholesterin. In consideration of these facts, Clark submits the theory that hyperthyroidism has a similar action on the human fetus to that which it has on the tadpole. He also suggests that other fetal monstrosities may be the result of endocrine disturbances.

Lancet, London

1: 1107-1158 (June 2) 1928

Ovarian Hormone. E. C. Dodds.—p. 1107.
*Two Apparent Recoveries from Anesthetic Leprosy Following Protein Shock Treatment. P. Manson-Bahr.—p. 1111.
Differentiation of Hyperkinesis in Children. E. W. N. Hobhouse. —p. 1112.
Surgical Significance of Corpulence. R. J. M. Love and W. F. Christie. —p. 1118.
Influence of Ultraviolet Rays on Industrial Output. A. L. Punch and R. Wilkinson and Others.—p. 1120.
Lead Shot in Appendix. S. G. Scott.—p. 1122.
Paraphenylene-Diamine Labyrinthitis. E. Watson-Williams.—p. 1123.

Recovery from Anesthetic Leprosy Following Protein Shock.—In one of the cases reported by Manson-Bahr, Hasson's vaccine was used; in the other case typhoid and paratyphoid vaccine was used. The improvement in the patients' general condition, the restoration of the destroyed leprotic tissue and the return of sensibility were too apparent to be merely accidental. It is possible that beneficial results may not be obtained in every case of anesthetic leprosy, but in an early lesion protein shock treatment is certainly worth a trial.

1: 1159-1210 (June 9) 1928

Interpretation of Gastric Symptoms. C. Bolton.—p. 1159.
Relation of Anterior Lobe of Pituitary to Reproductive Organs. C. W. Bellerby.—p. 1168.
Chloroma: Three Cases. H. T. Ashby and G. S. Smith.—p. 1169.
*Splenic Anemia Due to Streptothrix Organism. J. Fawcett and A. G. Gibson.—p. 1171.
*Method of Treating Lupus Vulgaris. A. R. Somerford.—p. 1173.

Splenic Anemia Due to Streptothrix.—From the spleen of a girl, aged 11, ill with what Fawcett and Gibson diagnosed as splenic anemia, a streptothrix organism was isolated which was found to be pathogenic to monkeys only. Gradual decline in health followed intraperitoneal injections of the streptothrix organism, together with enlargement of the spleen, persistence of appetite, and tenderness of the abdomen. On the facts here described—the isolation of the organism, its pathogenicity to a monkey, and reisolation by blood culture from the animal—the authors submit that Koch's postulates have been fulfilled and that the streptothrix organism is the cause of the disease. The organism was regarded by Castellani as a species of nocardia.

Treatment of Lupus Vulgaris.—Somerford washes the skin over the diseased area with soap and water, and any fatty material is removed by swabbing with methylated spirit. The whole area, or a portion of it if the whole is large, is painted with liquor hydrargyri nitratis acidus. This process may be rather painful, and in nervous patients it may be advisable to paint the area previously with a solution of procaine hydrochloride. The painted area is then covered with lint spread with: phenol, 15 minims (1 cc.); zinc ointment, 1 ounce (30 Gm.). The dressing is made air-tight by overlapping pieces of surgical strapping and completed by a pad of wool and a bandage. This is left in position for forty-eight hours, and on removal ulceration, with some pus formation, is found to have taken place. In many cases one application is sufficient, but the process may be repeated any number of times. When ulceration has proceeded deep enough the dressing is replaced by lint spread with Brooke's ointment: unguentum hydrargyri oleatum, 10 per cent (B. P. 1885), 2 drachms; salicylic acid, 15 grains; sulphonated bitumen, N. F., 15 minims; zinc oxide, 1½ drachms; starch, 1½ drachms; petrolatum, 1 ounce. When the area has completely healed it will be possible to see whether any tuberculous tissue remains, in which case the areas still diseased can be retreated.

Tubercle, London

9: 405-460 (June) 1928

*Lupus: Particularly of Nose, Pharynx, Mouth and Larynx. S. C. Thomson.—p. 405.
*Pathology of Intestinal Tuberculosis. M. J. Stewart.—p. 409.
Intestinal Tuberculosis. L. E. Barrington-Ward.—p. 415.
Fusospirochetal Diseases of Lungs. D. T. Smith.—p. 420.

Treatment of Lupus.—Thomson's treatment of this condition consists of sanatorium principles and the galvanocautery. He says that it has never failed; it acts with certainty; used correctly it is free from risk or danger; and, compared with various forms of radiation, it is exempt from possible, uncertain and sometimes remote evil effects.

Pathology of Intestinal Tuberculosis.—Stewart discusses primary hyperplastic tuberculosis of the intestine, a comparatively rare type of tuberculous lesion, but one that is amenable to surgical treatment. The disease, fairly prevalent in European countries, is apparently rare in America. Of the twenty-one cases in Stewart's series, eighteen were histologically tuberculous, two showed tubercle follicles only in the associated lymph glands, while one was wholly negative. Two obtrusive clinical phenomena are directly dependent on the nature of the pathologic process. (*a*) Owing to the amount of new formation and thickening a large, palpable tumor makes its appearance in the cecal region, while (*b*) owing to encroachment on the lumen of the intestine signs of intestinal obstruction become manifest. Hyperplastic tuberculosis is a disease of the ileocecal region. It is usually confined to the last foot of the ileum, the ileocecal valve, the cecum or the ascending colon, any or all of which may be involved. In Stewart's series, much the commonest site was the last few inches of ileum with the ileocolic valve. Carcinoma of the cecum or ascending colon may be mimicked by hyperplastic tuberculosis. The age incidence is an important point in the differential diagnosis; in carcinoma, 85 per cent of the patients are over 40; in hyperplastic tubercle, 19 per cent are more than 40. Roentgen-ray examination is of great value in the diagnosis of hyperplastic ileocecal tuberculosis.

Oriental J. Diseases of Infants, Kyoto, Japan

3: 37-48 (May) 1928

*Artificial Feeding of Infants. T. Suzuki.—p. 37.
Serous Meningitis Caused by Infantile Lead Poisoning Before and After Discovery of Cause (Face Powder). I. Hirai and T. Iizuka.—p. 42.
*Lymphocytosis of Whooping-Cough. M. Fukushima.—p. 43.
*Iron Content of Organs of Pigeons Suffering from Avitaminosis. K. Sawanishi.—p. 44.
Case of Myatonia Congenita (Oppenheim). M. Komeda.—p. 46.
Clinical and Experimental Studies on Serous Menitis of Infants. H. Minamide.—p. 47.

Artificial Feeding of Infants.—Suzuki states that the lack of protein in artificial foods does not make them a thoroughly satisfactory substitute for the natural infants' food. By the addition of a certain percentage of orange juice to these foods they are made better substitutes for infants, as the orange juice supplies the necessary amount of vitamin C.

Lymphocytosis of Whooping Cough.—Fukushima concludes that the leukocytosis produced after the injection of whooping-cough bacilli, and the relative lymphocytosis also present, can be explained by the influence of the lipoid component of the bacilli.

Iron Content of Viscera in Avitaminosis.—Sawanishi caused a condition of avitaminosis in pigeons by feeding them exclusively on polished rice. After analysis of the organs of these birds, an estimation of the iron contents was made. The iron content of the liver and bone in the beriberi birds differed in quantity from that of the healthy birds and those of the other series; but in the kidneys, lungs, pancreas and brain no difference was seen.

Archives Franco-Belges de Chirurgie, Brussels

30: 377-468 (May) 1927

*Regional Intravenous Anesthesia. P. Cahen.—p. 377.
*Aerocoly and Volvulus of Stomach. G. Brohee.—p. 388.
*Acute Appendicitis in Young Children. R. Bourg.—p. 408.

Regional Intravenous Anesthesia.—Cahen used the method of regional intravenous anesthesia recommended by Bier in 1909 for operations on the extremities twenty-five times in operations on the hand and forearm. In only two (early) cases was the anesthesia unsatisfactory: in one case the Esmarch bandage was applied too loosely, and the second case was one of acute infection.

Aerocoly and Volvulus of the Stomach.—Brohee describes the displacements of the stomach produced by distention of the colon with intestinal gas or swallowed air. The accumulation occurs most frequently at the splenic angle and produces the following deformations of the stomach: (1) Fist-like depressions in the wall of the stomach. (2) Anteroposterior compression of the stomach with the formation in some cases of a false biloculation. (3) Simple folding of the walls of the stomach, pushed to the right, and the appearance of a stomach in columns. (4) Torsion of the stomach on its longitudinal axis with a resulting false biloculation. (5) Partial isoperistaltic volvulus. (6) Total isoperistaltic volvulus. (7) Combination of folding or anteroposterior compression with partial volvulus. (8) Total or partial antiperistaltic volvulus. The author believes that more consideration should be given to aerocoly as an important predisposing factor in the pathogenesis and prevention of volvulus of the stomach. The article contains seventeen reproductions of roentgenograms illustrating the above mentioned conditions.

Acute Appendicitis in Young Children.—Bourg reports ten personally observed cases of appendicitis in children ranging in age from 2 to 7 years. As a result of his experience he concludes: (1) In young children one encounters all the anatomico-clinical types of lesions met with in appendicitis in adults, from a slight attack to diffuse generalized peritonitis. (2) Localized or diffuse suppurations are much more frequent and the mortality is much higher than in adults. (3) In the young child diagnosis is even more difficult than in the adult. Vomiting always occurs at the beginning of the attack and constipation is habitual. A careful study of the facies is of great value in arriving at a diagnosis. Leukocytosis confirms an uncertain diagnosis and indicates the necessity for intervention. (4) Operation should be performed at once, no matter when the attack began. (5) One should operate without exception in cases of latent appendicitis and appendiceal abscess.

Archives des Maladies du Cœur, Paris

21: 273-352 (May) 1928

*Paroxysmal Tachycardia and Auricular Flutter. E. Géraudel.—p. 273.
*Auricular Flutter and Auricular Fibrillation. E. Géraudel.—p. 288.
Circulatory Stasis and Cardiac Output. L. Dautrebande.—p. 296.

Paroxysmal Tachycardia and Auricular Flutter.—On the basis of sixty-one cardiograms made in two cases of so-called paroxysmal tachycardia, Géraudel concludes that paroxysmal tachycardia has no real identity but represents merely certain phases of auricular flutter. Electrocardiographically speaking, paroxysmal tachycardia is nothing but a phase of 1:1 flutter.

Auricular Flutter and Auricular Fibrillation.—Géraudel believes that the only difference in the functioning of the auricles

in auricular flutter and in auricular fibrillation is one of rapidity. When the number of contractions ranges from 130 to 400, the rhythm is constant, whereas from 475 to 600 it is variable.

Archives de Médecine des Enfants, Paris

31: 261-324 (May) 1928

*New Nipple to Correct Harmful Mechanical Effects of Artificial Feeding. S. Dreyfus.—p. 261.
Congenital Regressive Rigidity. A. Gareiso and A. S. Marotta.—p. 276. C'en.

New Nipple to Prevent Harmful Mechanical Effects of Artificial Feeding on Development of Baby.—In natural feeding the baby's lips are pressed around the nipple and a downward and forward movement of the lower jaw creates a negative pressure which causes the milk in the nipple to pass into the baby's mouth. This negative pressure could not be produced if the contact were not hermetic. In artificial feeding with the ordinary type of nipple, however, milk would not flow out of the nipple if the contact were air-tight. Here the nipple is emptied by pressure exerted by the tongue. Dreyfus demonstrated experimentally that a weight of from 500 to 600 Gm. was required to compress the common rubber nipple. This represents the force transmitted from the tongue through the nipple to the palate. The first result of this pressure is the protrusion of the anterior part of the maxilla which becomes V shaped and favors protrusion of the incisors. The secondary effects result from the elevation of the palate and consist in deviation of the nasal septum and diminution in the volume of the nasal fossae. The latter condition results in mouth breathing which, in turn, favors the development of adenoids. In fact, changes in the bony framework of the thorax may be traced all the way back to artificial feeding. To eliminate these disadvantages, the author devised a nipple with a short tip on a broad base. The broad base acts as a flange and permits the baby to get only the tip of the nipple into its mouth, thus necessitating suction comparable to that used in breast feeding. As shown by roentgen-ray control, babies fed artificially through ordinary nipples had much more air in their stomachs than those who were fed through the Dreyfus nipple.

Bruxelles-Médical, Brussels

8: 938-971 (May 20) 1928

Measurement of Cardiac Output. L. Dautrebande.—p. 938.
Extra-Uterine Pregnancy. R. Beckers.—p. 944.
*Banti's Disease in Infant. G. Ruelle.—p. 949.
Immunizing Power of Sensitized Tuberculin. Rappin.—p. 952.

Banti's Disease in an Infant, Aged Four.—In Ruelle's case splenomegaly with marked enlargement of the abdomen was the only symptom present. In the differential diagnosis, acute infectious diseases such as typhoid, malaria, and acute tuberculosis and chronic conditions such as rickets, leishmaniasis and chronic tuberculosis were eliminated. Examination of the blood showed a slight diminution in the erythrocytes and polymorphonuclears and a leukopenia. A diagnosis of Banti's disease was made and splenectomy was performed with complete success.

Bulletin Médical, Paris

42: 553-584 (May 16-19) 1928

*Treatment of Cancer of Tongue. P. Moure.—p. 561.
Roentgenologic Study of Pulmonary Tuberculosis with Negative Auscultatory Findings. J. Stephani.—p. 563.

Treatment of Cancer of the Tongue.—From 1920 to 1925 Moure operated on forty-two patients for cancer of the tongue. A recent follow-up of twenty-two of these cases revealed the fact that the cancer had not recurred in ten of the cases in which operation had been performed from two and one half to six years ago. For small, beginning cancers of the tongue and for suspected lesions, particularly plaques of leukoplakia undergoing degeneration, the author recommends extensive resection with the bistoury under local anesthesia. In these cases of leukoplakia, he fears the stimulating and irritating action of radium on the adjoining plaques which are not in the field of destruction. In clinically evident but still limited cancer of the tongue, he likewise uses the bistoury and local anesthesia. The use of radium, which is less mutilating, is objectionable, due to the necrosis and the lymph gland reaction which it produces. Another objectionable feature of the use of radium is the fact that a patient in whom a cancer recurs after an application of radium is usually lost, because a second application results in disastrous necrosis and because surgical wounds made in irradiated tissues heal badly. On the contrary, if a cancer of the tongue treated surgically recurs, one can then use radium to good advantage. In cases, however, in which the lingual lesion is so inaccessible that surgical treatment would necessitate section or resection of the inferior maxilla, Moure uses radium, because it is much less dangerous than the operation.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

54: 673-710 (May 19) 1928

Resection of Inoculation Wound in Tetanus. P. Lecène.—p. 674.
*Echinococcus Cyst Opening into Bile Ducts. P. Lecène.—p. 676.
Delayed Symptoms in Skull Fracture. P. Lecène.—p. 677.
Suspension Apparatus for Fracture of Femur. Clavelin.—p. 680.
Association of Procaine Hydrochloride and Epinephrine. A. Schwartz. —p. 689.
Pregnancy Following Abdominal Myomectomy. Goulliaud.—p. 691.
Intra-Uterine Injections of Lipiodol. Sicard.—p. 699.
Roentgenologic Diagnosis of Condition of Fallopian Tubes. R. Proust and C. Béclère.—p. 700.
Removal of Safety-Pin from Stomach of Baby. A. Mouchet.—p. 709.

Treatment of Echinococcus Cyst Opening into Bile Ducts by Simple Choledochotomy.—Lecène's patient was a woman, aged 32. The clinical picture closely resembled that of gallstone colic with obstructive jaundice and infection. A diagnosis of calculus in the choledochus with infection of the bile tract was made and operation was performed. On opening the choledochus, which was about the size of a moderately distended loop of small intestine, a large quantity of bile mixed with pus and a great many hydatid vesicles escaped. Through a large drain, which was fixed to the choledochus, vesicles escaped for eight days. The patient left the clinic at the end of three weeks cured and has remained free from symptoms for the past two and one-half years. On the basis of this and another similar case, the author contends that simple choledochotomy and drainage suffice to cure hydatid cysts of the liver opening into the bile ducts and accompanied by choledochus obstruction and infection.

Écho Médical du Nord, Lille

32: 325-339 (June 9) 1928

*Vernes' Flocculation Test in Tuberculosis. C. Gernez and A. Breton.—p. 325.

Vernes' Flocculation Test in Diagnosis of Tuberculosis.—From observations based on 338 Vernes flocculation tests, Gernez and Breton conclude: (1) In healthy persons the Vernes reaction is negative in 96.9 per cent of cases. (2) In progressive, febrile pulmonary tuberculosis affecting the patients' general condition, it is positive in 98 per cent of cases. (3) In afebrile, almost stationary pulmonary tuberculosis not affecting the patients' general condition, it is positive in 73.8 per cent of cases. (4) In clinically healed pulmonary tuberculosis it is negative in 91 per cent of cases. (5) In extrapulmonary tuberculosis the Vernes reaction is of only relative value, except in progressive pleural tuberculosis, where it is almost constantly positive. (6) In afebrile patients suspected of having tuberculosis, a constantly negative reaction usually eliminates the diagnosis of tuberculosis. (7) In nontuberculous diseases and, in particular, during infectious diseases, the Vernes reaction loses some of its diagnostic value: a positive reaction is obtained in the acute period of most fevers.

Journal de Chirurgie, Paris

31: 321-480 (March) 1928

Physiology and Technic of Cholecystogastrostomy. L. Bérard and P. Mallet-Guy.—p. 321.
*Resection of Presacral Nerve. R. Bernard and D. Theodoresco.—p. 340.
Diagnosis and Treatment of Gangrene of Adults Caused by Obliterating Arteritis. R. Leibovici.—p. 354.

Resection of the Presacral Nerve.—Bernard and Theodoresco state that the principal indications for the section of the pelvic sympathetic nerves are pelvic pains for which there is no gross pathologic explanation, and pain of advanced pelvic cancer. They performed this operation in eight cases of the latter condition. The relief from pain was complete in some cases, partial in others.

31: 481-640 (April) 1928

Treatment of Intracanalicular Tumors of Breast. P. Lecène and M. Galtier.—p. 481.
*Section of Internal Pudendal Nerve. P. Wertheimer and L. Michon.—p. 497.
Abdominoperineal Resection of Rectum. F. Papin.—p. 510.

Indications, Technic and Results of Section of Internal Pudendal Nerve.—Wertheimer and Michon have found the muscle paralysis following section of the internal pudendal nerve of value in painful spasm or contracture involving the perineal musculature, as vaginismus and urethral spasticity. The anesthesia produced by this operation is of value in certain cases of persistent cystalgia, in vulvovaginal pruritus and in extremely painful, inoperable, vulvovaginal cancers. As the result of its vasomotor action, it also relieves the pain and diminishes the dystrophic lesions of kraurosis vulvae. A well illustrated description of the technic of the operation is given. The authors used this operation in two cases of vaginismus, in one case of painful vulvovaginal epithelioma previously treated with radium, and in one case of kraurosis vulvae. In all of these cases the results were very satisfactory.

Journal de Radiologie et d'Électrologie, Paris

12: 161-208 (April) 1928

Roentgenologic Examination of Ascending Aorta. G. Chaumet.—p. 161.
*Roentgenotherapy and Diathermy in Poliomyelitis. F. F. Luzes.—p. 172.

Roentgenotherapy and Diathermy in Poliomyelitis.—Luzes reports the results obtained in forty-four cases of poliomyelitis with two series of roentgen-ray treatments, separated by an interval of thirty days, during which diathermy was used. Immediately following the diathermy treatments galvanization and faradization were employed, as well as massage and mechanotherapy. The roentgen-ray treatments consisted in irradiation of the spinal cord at the level of the segment corresponding to the extremity or extremities involved as soon as possible so as to profit from the destructive power of radiotherapy on newly formed connective-tissue cells which, proliferating about the involved motor cells, surround and destroy them by a process of neurophagia. It is especially in this period of invasion that radiotherapy is of value. Diathermy stops the vascular spasm and thereby counteracts the hypothermia and increases the nutrition of the tissues, particularly the muscles. In the forty-four cases treated, there were 13.6 per cent of failures, 38.6 per cent of ameliorations, and 47.8 per cent of recoveries. It was noted that the degree of amelioration was inversely proportional to the time elapsing before the treatment was begun.

Presse Médicale, Paris

36: 625-640 (May 19) 1928

*Spasmodic Coryza. Pasteur Vallery-Radot, P. Blamoutier and Justin-Besançon.—p. 625.
*Treatment of Puerperal Mastitis. A. Hamm.—p. 628.

Spasmodic Coryza.—Spasmodic coryza is a pure, nasal asthma and is observed frequently either alone or in the course of attacks of bronchial asthma. In a study of 188 cases, Vallery-Radot et al. noted the following characteristic symptoms: There are repeated fits of sneezing accompanied by a profuse, watery nasal discharge. The attacks usually begin with a fit of sneezing during which rhinorrhea appears. The nasal discharge varies greatly in quantity and is limpid and nonviscous. It is poor in mucus and practically always devoid of cells. As a rule, it lasts longer than the sneezing. The entire attack lasts from a few minutes to an hour or more. Examination of the nasal fossae during an attack reveals a state of turgescence of the nasal mucosa, especially marked at the level of the inferior conchae. The mucosa is very red and swollen, obstructing more or less completely the nasal fossae. The nasal hydrorrhea is accompanied in about one third of the cases by ocular symptoms: itching of the eyeball, conjunctival injection, and lacrimation. Between the attacks, the patient is usually free from symptoms but occasionally obstruction to nasal breathing is experienced. Very frequently persons suffering from spasmodic coryza are sensitized to a protein by either the respiratory or the digestive route. Although a great many forms of treatment have been proposed, none have proved effective.

Treatment of Puerperal Mastitis by Local Application of Specific Antivirus.—Hamm recommends the local application of antivirus according to Besredka's technic for the treatment of puerperal mastitis. If a laboratory is available, a specific antivirus should be made from the organism predominating in the pus; if it is not, a "mixed staphylo-streptococcal" antivirus may be used.

36: 657-672 (May 26) 1928

*Treatment of Tuberculosis with Methylated Antigen. L. Nègre, A. Boquet and J. Valtis.—p. 658.
*Herpes Zoster and Chickenpox. E. François-Dainville and H. Reynaud.—p. 660.
Surgical Treatment of Pelvic Neuralgias. A. Crainicianu.—. 661.

New Results with Methylated Antigen Treatment of Tuberculosis.—Nègre et al. discuss thirteen cases of tuberculosis of the testis, intestine, peritoneum, urinary tract, bones and joints, and lung successfully treated with methylated antigen. They consider methylated antigen less dangerous and more convenient to use than the tuberculins.

Herpes Zoster and Chickenpox.—François-Dainville and Reynaud report a case which supports the theory of the common cause of herpes zoster and chickenpox: fourteen days after the appearance of herpes zoster in a mother, chickenpox appeared in her 4 months old nursing child. In the four days that followed, chickenpox developed in five other children, not her own, with whom she came in contact.

Schweizerische medizinische Wochenschrift, Basel

58: 473-496 (May 12) 1928

*Cancer Formation and Regeneration. B. Fischer-Wasels.—p. 473.
*Method for Early Diagnosis of Bitemporal Hemianopsia in Tumor of the Pituitary. P. Wiesli.—p. 479.
*Rôle of Vegetative System in Tuberculosis. T. Bovet.—p. 483.

Cancer Formation and Regeneration.—Fischer-Wasels objects to the irritation theory on the grounds that it says nothing, since every vital process is connected with irritation, and that it is, in a positive sense, misleading. The tumor cell differs fundamentally from the normal cell. Its peculiar nature is seen in a reversionary metamorphosis that is both morphologic and chemical. This tumor cataplasia appears only in cells that are actively dividing and increasing. Tumor formation is always in the closest relation to embryonic or regenerative developmental processes. Thus, in his opinion, tumors dependent on external factors are actually regeneration tumors. They develop from regenerating tissue, in which the regenerative process has taken a wrong turn. This theory, he holds, is in harmony with observed facts and, furthermore, provides a biologic explanation of the basic facts of tumor formation.

Method for Early Diagnosis of Bitemporal Hemianopsia in Tumor of the Pituitary.—Wiesli presents eight cases of tumor of the pituitary or of the brain, in which Vogt's modification of Bjerrum's method of examining for disturbances of the field of vision enabled a correct diagnosis to be made, after the usual methods had failed. The technic is described.

Rôle of Vegetative System in Tuberculosis.—From clinical studies and from a review of the literature, Bovet concludes that in general tuberculosis has first a stimulating and later a paralyzing action on the vegetative system, under which term he understands the endocrine gland apparatus, the vegetative nervous system and the ions of the body fluids.

Archivio Italiano di Chirurgia, Bologna

21: 1-108 (April) 1928

*Sympathectomized Arteries. G. Colle and R. Pecco.—p. 1.
Effects of Operation on Acid-Base Equilibrium of Organism. A. Ciminata and A. Bich.—p. 38.
*Tuberculosis of Pubis. G. Serra.—p. 57.
*Plastic Linitis Due to Carcinoma. A. Vecchi.—p. 65.
Pressure Erosion of Articular Cartilage in Experimental Luxation. E. Polacco.—p. 85.

Observations on Arteries After Sympathectomy.—Colle and Pecco conclude that periarterial sympathectomy induces vasodilatation and hyperdistensibility of the vessels in the entire region dependent on the arterial tree that is the site of the intervention and sometimes also in neighboring regions, not dependent on the sympathectomized vessels. The perivascular fibrosis and the endarteritis sometimes observed in animals are

not due to the neuroprivation incident to the sympathectomy. They are referable to traumatizing maneuvers, to the use of antiseptic or irritating substances and to inflammatory phenomena. * The intervention should, therefore, be rigorously aseptic. Sympathectomy causes a lability in the walls of the arteries affected by it.

Tuberculosis of the Pubis.—Tuberculosis of the pubis is exceedingly rare, especially in children. The prognosis is favorable. In Serra's patient, a man, aged 19, the disease appeared shortly after a trauma. Conservative treatment proved useless; operation was performed with good results.

Plastic Linitis.—On operation, in Vecchi's case, the tumor was identified as a firm carcinoma, in which, at certain points, the hypertrophic reaction of the connective tissue exceeded and, in part, masked the malignant invasion. Staining of the mucin revealed the epithelial cells. The tumor differed from other forms of solid carcinoma of the stomach by the characteristic reaction of the connective tissue of the gastric walls and by the presence of numerous epithelial cells filled with mucus. It was not clear whether these cells were in a state of mucoid degeneration, or whether they were excreting mucus and had assumed a particular aspect owing to the resistance offered to the cellular invasion by the connective tissue.

Clinica Pediatrica, Modena

21: 109-212 (April) 1928

*Myoplasty with Sartorius Muscle. A. Comolli.—p. 109.
Procedures for Repairing Cranial Defects. E. Gioja.—p. 157.
*Etiology and Pathogenesis of Arthritis Deformans. G. Colle and E. Polacco.—p. 193.

Myoplasty with Sartorius Muscle.—Comolli describes his technic, which has given good results in the ten cases in which he has employed it: six cases of recurring inguinal hernia, one case of hernia of the linea semilunaris associated with inguinal hernia, two cases of hernia following laparotomy, and one of hernia following laparotomy and associated with inguinal hernia.

Etiology and Pathogenesis of Arthritis Deformans.—Colle and Polacco conclude from their experiments on twenty rabbits that trauma leading to disturbances of nutrition in joints prepares the soil for the development of arthritic lesions. Trauma and the associated infections provoked all the changes of arthritis deformans in the experimental animals. The fact that they succeeded in developing lesions similar to those of arthritis deformans with filtrates and suspensions of the staphylococcus and the tubercle bacillus confirms, the authors think, their premise that different stimuli may produce identical anatomicopathologic changes.

Clinica Pediatrica, Modena

10: 193-256 (April) 1928

Influence of Pancreas on Metabolism of Creatine Bodies. A. Corbia.—p. 195.
*Convalescent Serum in Prophylaxis of Measles. A. Macchi.—p. 213.
Eutrophic Action of Irradiated Foods. G. C. Bentivoglia.—p. 221.

Convalescent Serum in Prophylaxis of Measles.—Of the 101 children treated in Macchi's series, twenty-four were under 1 year of age, thirteen were between 1 and 2 years old, while the others ranged from 2 to 9 years. Convalescent serum was administered only to children who had presumably already been infected by the measles virus within the preceding ten days. The results were good. Of the 101 children, only one developed typical measles, which was without complications involving the respiratory organs. The child recovered on the fourth day after the appearance of the exanthem. In fourteen children there developed an attenuated type of measles, which was much the same in all.. A lengthening of the period of incubation was noted—which in many amounted to from twenty to twenty-two days. The catarrhal symptoms of the nasal mucosa and the conjunctiva were insignificant. The fever was moderate and of short duration (not more then twenty-four hours). Koplick's spots were present, also the small punctiform hemorrhages about the uvula and the soft palate. The exanthem was rather pale and tended to disappear rapidly. There was an entire absence of the ordinary complications following measles. In the remaining eighty-six children the prophylaxis was complete. The maximum prophylactic dose of the serum was 1 cc., irrespective of the age of the child.

Policlinico, Rome

35: 177-232 (April 15) 1928. Surgical Section

Respiratory Mechanism in Pulmonary Tuberculosis Treated by Collapse. V. Bonomo.—p. 177.
Experimental Researches on Enterovesical Fistulas. G. Pedroli.—p. 195.
*Modified Method of Nephropexy. G. Pisanò.—p. 225.

Modified Method of Nephropexy.—Pisanò has employed his modified method of nephropexy in five cases. The kidney is exposed through a long Simon incision. The incisions in the fatty capsule and the fibrous tissue are made in such a manner as to cut two rectangular flaps, which are dissected free from the parenchyma throughout their length. Then two incisions are made at the upper and lower margins of the twelfth rib, care being taken not to injury the pleural cavity. The two flaps of the kidney capsule are inserted into these openings, the upper flap above the rib and the lower flap below the rib. The ends of the two flaps, are reunited on the outside of the rib, the adjacent tissues being used, if necessary, as points of reinforcement. In all five cases reported, the pains disappeared almost immediately, the impaired intestinal function was restored, convalescence was rapid, and the patients were able to work at full capacity.

Archivos Españoles de Pediatría, Madrid

12: 65-128 (Feb.) 1928

*Pathogenesis and Endocrine Symptoms of Infantile Kala-Azar and of Visceral Leishmaniasis. G. Pittaluga.—p. 65.
Rickets: Treatment with Antirachitic Vitamin. J. Bravo y Frías.—p. 75.

Infantile Kala-Azar and Leishmaniasis.—Children with kala-azar sometimes exhibit symptoms of endocrine disturbance, such as asthenia, pigmentation, local edema and local hypertrichosis. Asthenia is an early symptom of visceral leishmaniasis. The eyelashes are very long and dark.

Revista Médica de Chile, Santiago

56: 309-408 (April) 1928

New Conception of Pathogenesis of Adams-Stokes Syndrome. E. Géraudel.—p. 309.
*Relation Between Epinephrinemia and Hypertension. R. Bustos.—p. 320.
Foreign Body (Stone) in Eyeball. E. Luque.—p. 341.

Relation Between Epinephrinemia and Hypertension.—A patient with Bright's disease and hyperpiesis had two hypertensive crises accompanied by cardiac asthma. By injecting 1 or 2 mg. of epinephrine, subcutaneously, Bustos was able to reproduce these crises with all accompanying symptoms. Therefore, he concludes that these crises are caused by an increase of epinephrine in the blood.

Revista Médica Cubana, Havana

39: 525-658 (May) 1928

Surviving Books of Escobar. J. A. Trémols.—p. 525.
*Multiple Myeloma in a Child. A. A. Aballí.—p. 528.
*Heredity of Malaria. R. Odriosola.—p. 542.
Active Principle of Pituitary Gland. R. de la Cruz.—p. 548.
Electrocardiogram in Extrasystolic Arrhythmia. R. C. Barrena.—p. 561.
Chronic Lead Poisoning. E. Yaniz.—p. 567.

Multiple Myeloma in a Child.—In Aballí's patient, aged 18 months, swelling over the right scapula was the first tumor noted. On examination it proved to be myeloma. It caused pain and was painful on pressure. Soon afterward tumors developed in the right femur, then the left femur, in the pelvic bones, and in the frontal and malar bones. The leukocytes numbered 25,000; erythrocytes, 4,000,000; eosinophils, 5 per cent; the hemoglobin was 60 per cent; the Wassermann and Mantoux tests were negative. Bence-Jones albumosuria was present, although intermittently. Polyuria and polydipsia appeared as tumors developed in the base of the skull. These symptoms caused the child much suffering. Finally, there appeared enlargement of the liver and spleen, a foul condition of the mouth, with loss of teeth. The child became very cachectic and weak and death was imminent.

Heredity of Malaria.—Odriosola is convinced that malaria can be inherited, especially if the mother contracted the disease during pregnancy or if she suffered from an acute exacerbation at that time. He advises examining the blood of every pregnant woman who develops fever for *Plasmodium malariae*. The new-born present the cachectic, apyretic and meningitic forms of malaria.

Archiv für Schiffs- und Tropen-Hygiene, etc., Leipzig

32: 221-276 (May) 1928

Frambesia in Liberia. E. Maass.—p. 221.
*Therapy of Blackwater Fever. A. G. Trabadoros.—p. 229.
Resettlement of Malaria Infested Regions in Georgia. M. Maruaschwilt. —p. 236.
*Clinical Picture of Congenital Malaria. B. Deutsch.—p. 243.
Histology of Filaria Bancrofti and Loa Loa. H. Vogel.—p. 247.
*Relation of Pellagra to Pernicious Anemia. W. Mollow.—p. 250.
Pathologic Importance of Balantidium Coli. N. Kipschidse.—p. 253.
Prevention and Treatment of Gastro-Intestinal Disorders in Tropics. H. Kümmell.—p. 256.
*Etiology of Mexican Typhus. H. Mooser.—p. 261.

Therapy of Blackwater Fever.—Trabadoros has had good results with the quinine treatment of blackwater fever. In cases of quinine idiosyncrasy, however, or of extreme weakness, when the use of quinine would be dangerous, he recommends plasmochin. It appears to be especially effective in combating the gametes. On the other hand, it is not so effective against the small ring-shaped parasites of tropical malaria. For this reason it has been used in combination with quinine in treating this form of the disease. This method permits a decrease in the quinine dosage. The author reports the use of plasmochin in twenty-two cases, and the results are apparently favorable.

Clinical Picture of Congenital Malaria.—On the basis of seven cases, Deutsch lists the following as features by which congenital malaria may be recognized: (1) A history of malaria in the mother during pregnancy. (2) Unaccountable paleness in the child. (3) Dyspeptic symptoms, which disappear only with specific quinine treatment. (4) Sweating, coldness and blueness of hands and feet, goose-flesh. At more or less regular times a stretching of the limbs, corresponding to the paroxysms of malaria. (5) Absence of any regular rise in temperature. (6) A firm and enlarged spleen and frequently also an enlarged liver. (7) Urobilin in the urine. (8) Absence of malarial parasites in the peripheral blood. (9) Anisocytosis, poikilocytosis, hemoglobinemia, leukocytolysis. (10) Lymphocytosis, eosinopenia and slight monocytosis.

Relation of Pellagra to Pernicious Anemia.—On the basis of two cases of long standing pellagra, in which the blood picture closely resembled that of pernicious anemia, Mollow suggests that both diseases may be manifestations of an intestinal intoxication the toxins of which at times attack the nervous system and at other times, perhaps more frequently, the hematopoietic system. One of the patients was given liver diet with excellent results.

Etiology of Mexican Typhus.—More than 92 per cent of 100 male guinea-pigs which Mooser inoculated with Mexican typhus developed typical lesions in the scrotum, the tunica cremasterica, the testis, and especially the tunica vaginalis. In sections of the tunica from twenty-two of the animals, killed while the scrotum was swollen, there were found large numbers of organisms corresponding exactly to those described by Ricketts and found in lice by Rocha Lima. The theory that *Rickettsia prowazeki* is the cause of typhus was thus substantiated. Very small portions of the tissue and even a drop of the fluid found under the swollen tunica were sufficient to cause typical infection in guinea-pigs in three to four days. Further support to the Rickettsia theory was given by the fact that infection of the author's hand through a superficial wound was followed by typical typhus, which lasted twelve days.

Archiv für Verdauungs-Krankheiten, Berlin

42: 189-246 (March) 1928

*Chromoscopic Test of Gastric Function with Neutral Red. S. Kartal. —p. 189.
*Stomach in Paravertebral Anesthesia. E. Freude.—p. 197.
Excretion of Cholesterol into Intestine. H. Salomon.—p. 204.
Question of Excluding Chlorophyl from Diet Before Examination for Occult Blood. Z. Ernst, B. von Purjesz, Jr., and L. Zilzer.—p. 205.
*Repeated Test Meal in Examination of Activity of Gastric Cells. S. Reiselman.—p. 211.
Effect of Caffein-Free Coffee on Tonicity of Stomach. A. W. Bauer.—p. 225.

Chromoscopic Test of Gastric Function with Neutral Red.—Kartal does not regard neutral red as a reliable dyestuff for testing the function of the gastric glands. In 30 per cent of his cases the excretion of the dye did not correspond with the secretion of hydrochloric acid. As to the localization of the excretion, his experience makes it appear very improbable that it is only the delomorphous cells that eliminate neutral red. Four patients were given injections of the dye while being operated on. It was found that the antrum pylori had the same diffuse violet red color as the more immediate vicinity of the ulcer. The stomachs of two dogs, killed a half hour after injection of neutral red, were found to be colored in the same way through their entire extent.

The Stomach in Paravertebral Anesthesia.—From a study of more than forty cases, Freude found that when there was total interruption of the spinal nerves the tonus of the stomach was greatly reduced. When a single segment—seventh, eighth or ninth—was cut off on both sides, there was a relaxation of tonus in the interrupted segment, but the lowering of the tension of the gastric wall was not so great as after total interruption. Peristalsis stopped in the interrupted segment, and was greatly increased in the neighboring segments. The author points out that ulcer irritation causes a disturbance of intersegmentary equilibrium similar to that caused by anesthetizing a segment.

The Repeated Test Meal in Examination of Activity of the Gastric Cells.—Reiselman made tests on 208 men who were generally healthy and showed no symptoms of gastric disorder. He followed the general method of Simnitzky, but modified it in various ways in different series of experiments. The most nearly uniform results were obtained when the following method was employed: After the test meal was given, the tube was left in the stomach until all the secretion was withdrawn. Then the patient received a second test meal, exactly the same as the first. In from one to three days the same investigation was repeated. In 85 per cent of the cases, the results of the different tests agreed in their indication of the type of person examined. The writer regards the repeated test meal as a helpful measure in diagnosis, when carried out so as to exclude in so far as possible psychic and other complicating factors, and when the secretion is not interrupted too soon after the test meal.

Deutsche medizinische Wochenschrift, Berlin

54: 727-770 (May 4) 1928. Partial Index

Genital Bleeding in Aged Women. W. Benthin.—p. 727.
Functional Importance of Middle Respiratory Position for Ventilation of Lungs. E. Bass.—p. 729.
Behavior of Circulating Proteins of Human Plasma in Health and Disease. W. Starlinger.—p. 731.
*Unusual Complication of Scarlet Fever. W. Klestadt and R. Stern.—p. 736.
*Pernicious Anemia: Funicular Myelosis. H. Natanson.—p. 737.
Splenectomy in Pernicious Anemia. L. Böhm.—p. 738.
Hemorrhagic Syndrome and Constitution. G. Nagy.—p. 740.
Meinicke's Turbidity Reaction. G. Elkeles.—p. 741.
Hepatic Swelling from Active Hyperemia. G. Leopold.—p. 742.
Portable High-Frequency-Roentgen-Ray Apparatus. H. Cramer.—p. 743.
Automatic Movement of Gallbladder. E. Moser.—p. 744.
Permanent Ampules for Serial Injections. A. Winkler.—p. 745.

Unusual Complication of Scarlet Fever.—On the fourth day of a severe case of scarlet fever in a woman, aged 28, a necrosing inflammation of the larynx, trachea and main bronchi set in, manifested clinically by severe dyspnea. It extended with extreme rapidity. In the first stage there was an abundant tenacious secretion, which rapidly dried, leaving crusts. Superior tracheotomy brought considerable relief, but the patient died of heart failure two days after admission. Streptococci alone were found.

Pernicious Anemia: Funicular Myelosis.—A man, aged 52, had suffered for seven years from progressive weakness of the lower extremities with spastic atactic gait. More recently the weakness had extended to the arm. There were now high grade paraplegia with moderate contractures and heightened tendon reflexes; the foot clonus reflex could not at times be elicited, Babinski's and Oppenheim's signs were positive on both sides. The patient complained for the first time of a sensation of burning in the tongue. The blood examination showed: hemoglobin 62 per cent, erythrocytes 2,500,000, color index 1.24, leukocytes 4,500, anisocytosis, poikilocytosis, megalocytosis, polychromasia, a number of erythroblasts, lymphocytosis. In the stomach, free hydrochloric acid and pepsin were absent.

Colon bacilli were present in the duodenal juice. The urinary urobilinogen was increased. The condition of the blood and the general condition improved rapidly after two intramuscular blood injections. In the following eight months, while the nervous condition remained unaltered, a blood picture corresponding to pernicious anemia did not reappear. About four months after his discharge, the patient was readmitted with the complete picture of pernicious anemia. Blood transfusion brought no relief, and the patient died.

54: 771-812 (May 11) 1928. Partial Index

Importance of Treating Strabismus Early. C. H. Sattler.—p. 771.
Psychotherapeutic Ideas in Modern Medicine. A. Kronfeld.—p. 772.
Cen.
Action of Products of Digestion of Albumin and Bacteria in Healthy and Tuberculous Guinea-Pigs. G. Lepehne and R. Wigand.—p. 774.
*Sedimentation Speed of Erythrocytes in Differential Diagnosis of Diseases of Liver and Gallbladder. G. Noah and E. Hahn.—p. 776.
Mechanism of Emptying of Extrahepatic Bile Ducts. K. Blond.—p. 778.
*The Blood Picture in the Differentiation Between Paratyphoid B and Appendicitis. Esau.—p. 779.
Differential Diagnosis of Febrile Abdominal Diseases; Leukocyte Picture. A. Sonnenfeld.—p. 781.
*Diagnosis of Acute Pancreatitis. A. Roseno and W. Dreyfuss.—p. 783.
Postoperative Acidosis. E. Batzdorff.—p. 784.
Eclampsia in Mother and Child. S. Joseph.—p. 785.
New Method of Affixing Permanent Catheter in the Man. A. Rosenburg.—p. 786.
Epidemiology of Last Diphtheria Wave in Berlin. E. Seligmann.—p. 787.
"Combined Treatment of Malignant Diphtheria with Diphtheria and Streptococcus Serums." U. Friedemann.—p. 789.
Reply. H. Finkelstein and E. Königsberger.—p. 790.
Reply. F. Meyer.—p. 790.

Sedimentation Speed of Erythrocytes in Differential Diagnosis of Diseases of Liver and Gallbladder.—In a series of clinical researches, Noah and Hahn found that the sedimentation speed was greatly decreased in lesions of the hepatic parenchyma associated with atrophy, and that it was decreased, normal or occasionally slightly increased in parenchymal lesions associated with catarrhal icterus. As the clinical condition improved, the sedimentation usually became more rapid. In syphilitic icterus the sedimentation was accelerated. In cirrhosis (with the exception of cardiac cirrhosis) and in tumors, the sedimentation time was shorter. The same was true for cholecystopathies. Parenchymal injury from mechanical occlusion by stone or tumor is usually associated with increased sedimentation speed.

The Blood Picture in the Differentiation Between Paratyphoid B and Appendicitis.—In Esau's experience, the shifting in the leukocyte picture has only a limited value in the differential diagnosis between paratyphoid and acute appendicitis.

Diagnosis of Acute Pancreatitis.—Low diastase values, glycosuria or hyperglycemia, very high leukocyte counts and marked shifting to the left are the most important symptoms of acute total necrosis of the pancreas. It should be realized that the blood picture is significant only as indicating more or less severe injury. The diastase reaction, also, is only a symptom of the backing-up of the specific secretion into the blood. It is not connected exclusively with pancreatitis.

Deutsche Zeitschrift für Chirurgie, Leipzig

209: 145-288 (May) 1928

*Heart Action as Affected by Operative Procedures. W. Wachsmuth and G. Eismayer.—p. 145.
*Origin and Prevention of Operative Trauma as Reflected in Study of Blood. H. von Seemen and H. Binswanger.—p. 157.
Joint-Exudate Reaction: Method of Estimating Rôle of Acidity in Causation of Arthritis Deformans. C. Häbler.—p. 211.
*Fibrinogen and Fibrin Ferment Content of Blood Following Injury to Liver Parenchyma. Lurz and Röhrich.—p. 239.
Buffer Capacity of Blood in Suppurative Diseases with General Infection. P. Müller.—p. 241.
Encephalitis; Complications. G. Schaltenbrand.—p. 246.
Histology of Healing of Fractured Long Bones. W. Schulze.—p. 251.
Case of Arachnodactylism. H. U. Kallius.—p. 256.
Phantom Tumor of Flexor of Hand. Esau and R. Hückel.—p. 270.
Reduction of Posterior Dislocations of Elbow Joint. P. Graf.—p. 275.
Bilateral Subcutaneous Rupture of Quadriceps Tendon. S. Frey.—p. 284.

Heart Action as Affected by Operative Procedures.—Electrocardiographic observations in dogs and human beings on the effect of operative procedures on the heart action revealed little of value. Such disturbances in impulse conductivity as were noted were apparently not dependent on the operative procedure itself, but were caused solely by the anesthetic. In doubtful cases the pulse and blood pressure observations were found to be much more reliable guides. Preoperative treatment with cardiac stimulants has no particular value in persons with normal hearts; digitalization is harmful. The purely scientific value of cardiographic observations made in the course of an operation is practically nil because of the numerous sources of error.

Origin and Prevention of Operative Trauma as Reflected in Study of Blood.—Von Seemen and Binswanger studied the albumin content of the blood in 100 surgical cases, in two cases of spontaneous venous thrombosis, and in six of postoperative thrombosis. They conclude that tissue destruction is the basis of the processes taking place in an organism in the course of aseptic wound healing, traumatic lesions, absorption of a hematoma, healing of a fracture, etc. The inflammatory reaction thus caused leads to a general disturbance in metabolism. These changes can be studied in the altered albumin content of the blood. Reduction in blood stability is responsible for certain postoperative complications, particularly thrombosis. Impairment of stability is due to increase in the coarsely dispersible proteins of the plasma. The authors demonstrated increased coagulability of blood platelets in blood with increased globulin content. An increase in the number of platelets with a preponderance of immature, easily clumping thrombocytes was likewise observed in the course of wound healing. The authors further conclude that quantitative and qualitative changes in the electrolyte content of the blood, disturbances of the ionic concentration, and of the acid-base balance likewise play an important rôle in the healing of wounds. They see in the correcting effect of Ringer's solution proof of the relation of the mineral salt metabolism to the protein content of the blood. They were able to prove that postoperative changes in the composition of the blood furnish the essential conditions for the occurrence of venous thrombosis. These conditions are: (1) increase in the coarsely dispersible plasma proteins with resultant impairment of blood stability; (2) increase in blood platelets and in the more viscous immature forms; (3) retardation of the blood current (injury to vasomotors, rest in bed, constricting bandages); (4) changes in the blood-vessel wall. The rôle played by the loose connective tissue is obviously an important one. The prophylaxis of postoperative thrombosis is seen in the reduction to a minimum of tissue destruction, of the inflammatory reaction, of hematoma formation, and of necrosis. The unavoidable metabolic disturbances can be successfully combated by the use of the calcium-containing Ringer's solution or of hypertonic dextrose solution. In their experience, venesection produced the same results promptly and effectively. These measures act by facilitating the passage of tissue fluid into the circulation, by removing toxic products, and by hastening the reestablishment of a normal balance in the blood and tissues.

Fibrinogen and Fibrin Ferment Content of Blood Following Injury to Liver Parenchyma (Liver Necrosis as the Result of Ligation of the Hepatic Artery).—Extensive injury to the liver produced by ligation of the hepatic artery did not result in lowering the fibrinogen and fibrin ferment content of the blood. Hepatic injury per se is apparently not the essential cause of postoperative cholemic bleeding.

Jahrbuch für Kinderheilkunde, Berlin

119: 253-373 (April) 1928

*Epidemic of Poliomyelitis in Hungary. J. von Bókay and J. Vas.—p. 253.
*Nutritive and Economic Value of Kefir. K. Švehla.—p. 263.
*Nutritive Value of Kefir for Well and Sick Children. K. Švehla.—p. 280.
Gastric Motility in Infancy. A. Peiper and H. Isbert.—p. 291.
Metabolism of Child on Parenteral Feeding with Proteins. O. Beck.—p. 300.
*Relationship Between Dick Test and Streptococcus Antitoxin Content of Blood. J. Paunz and E. Csoma.—p. 324.
Treatment and Fate of Syphilitic Children. K. Fürst.—p. 335.

Epidemic of Poliomyelitis in Hungary.—In 1926, 252 cases of acute anterior poliomyelitis were reported in Hungary. The epidemic centered in and around Budapest and reached its height in August. Seventy-eight per cent of the patients were under 3 years of age; 22 per cent, under 1 year. Only two adults were attacked. The paralysis affected both lower

extremities in fifty-six cases, both upper extremities in three, all four extremities in eleven, the entire body in one case. In 7.9 per cent there was healing with full restitution. The mortality was 4.3 per cent. Five of the eleven fatal cases were of the Landry type.

Value of Kefir.—Švehla found that kefir prepared from sterile milk and pure ferment and put in boiled bottles closed with sterile tops lost nothing of its nutritive qualities or palatability in six years' time. In pigeons fed on polished rice, it had the same value as breast milk in postponing (for about fourteen days) the appearance of symptoms of avitaminosis. In severe forms of polyneuritis, it failed in the same manner as raw wheat. It is a beverage of great importance in the dietotherapy of children and adults and is an economical and advantageous method of preserving milk. Milk rendered "lifeless" by boiling is restored to "vitality" by this method. Details of a series of cases of gastro-intestinal disease in children treated with kefir are given.

Relationship Between Dick Test and Streptococcus Antitoxin Content of Blood Serum.—The serum of Dick-negative children and adults and that of originally Dick-positive children who had been rendered Dick-negative by active immunization was found by Paunz and Csoma to neutralize standard toxin solution of *Streptococcus haemolyticus scarlatinae* in tenfold strength. The serum of Dick-positive children did not neutralize the solution, but in some cases it neutralized a weaker (double strength) solution. In two patients in whom the Dick reaction remained positive after recovery from scarlet fever, the serum did not neutralize the regular toxin solution. These investigations extended to about seventy children, all over 1 year old, and ten adults.

Klinische Wochenschrift, Berlin

7: 921-968 (May 13) 1928. Partial Index

*Results of Malaria Treatment of Paralysis. B. Dattner.—p. 921.
Action of Antagonistic Influences on Acid-Base Equilibrium. E. Schiff.—p. 927.
Oxidation Processes in Ferruginous Compounds of Hemoglobin; Oxidizing Powers of Living Bacterial Cells. K. Bingold.—p. 928.
*Site of Anaphylactic Reaction. T. Ehmer and J. Hammerschmidt.—p. 931.
*Pathogenesis of Gastric Tetany. H. Steinitz.—p. 932.
Action Currents in Tonic Cervical and Labyrinth Reflexes and in Caloric Irritation of Labyrinth. W. Klestadt and K. Wachholder.—p. 935.
*Residual Water in Liver Diseases. V. Weiss.—p. 936.
*Operation for Retrobulbar Neuritis of Nasal Origin. A. Esch.—p. 938.
Treatment of Otogenous Vertigo. H. Curschmann.—p. 941.
*Freund-Kaminer Reaction for Carcinoma. A. Kubányi and M. Jakob.—p. 943.
*Three Hundred Years of Clinical Thermometry. E. Ebstein.—p. 950.

Results of Malaria Treatment of Paralysis.—Dattner reports on 129 cases, treated with malaria from four to six years ago. Eighty-one of the patients are still living and in seventy the cerebrospinal fluid was examined within the last six months. In thirty-six of these the reaction was completely negative, in twenty-seven it was weakly positive and in seven it was completely positive. Fifty-seven were without clinical symptoms, in fifteen the clinical condition was stationary and in eight progressive. All the patients with complete clinical remission had either completely negative or weakly positive reactions. None of the patients with continuously negative cerebrospinal fluid have had a clinical relapse. All of those with continuously positive cerebrospinal fluid have relapsed or their disease is progressive. All seven patients who showed clinical progress of the disease and whose cerebrospinal fluid was examined had a positive reaction. Many of the patients who died were examined for the cerebrospinal fluid reaction shortly before death and all except one, who had cavernous tuberculosis and caseous pneumonia, reacted positively. As to the value of after-treatment, his figures show that the group of patients who were not treated with arsphenamine after the malaria showed the smallest percentage of remissions and the greatest percentage of deteriorations and that in the two groups of patients who received neoarsphenamine (one a total of 3 Gm. in daily doses of 0.15 Gm. and the other according to the usual method) the results were about equal. In a third group the neoarsphenamine injections were preceded by removal of from 20 to 25 cc. of cerebrospinal fluid. This group, as the most recent, is left out of the discussion.

The Site of the Anaphylactic Reaction.—In a peculiar septic disease of the mouse, which causes total but elective blockade of the vascular endothelium, Ehmer and Hammerschmidt found it impossible to produce anaphylactic shock. The fact was determined that the inhibiting substance was not present in the blood.

Pathogenesis of Gastric Tetany.—Steinitz reports a case of tetany occurring in pyloric stenosis from parapyloric ulcer and another case complicating duodenal stenosis from carcinoma of the duodenojejunal flexure. In both cases marked chlorine impoverishment of the organism (from vomiting) was demonstrated.

Residual Water in Liver Diseases.—When the veins of the liver are in a state of abnormal irritation, as in simple, syphilitic and arsphenamine icterus, large quantities of water are retained in the organ. In the cases with icterus that were examined by Weiss, the irritation of the veins was caused by pathologic changes in the hepatic parenchyma.

Operation for Retrobulbar Neuritis of Nasal Origin.—Esch reports five cases of fresh retrobulbar neuritis, in which atrophy of the optic nerve was not yet demonstrable. There was no evidence of disease of the accessory nasal sinuses. Since, in spite of conservative treatment, the optic nerve disease was progressing rapidly, operation (cleaning out of the ethmoid cells and sphenoidal sinus) was, nevertheless, performed. The result was restoration of normal vision in all the cases. In six older cases the results were not so good. Two further cases are too recent for the results to be given. In these thirteen cases, the mucous membrane of the sinuses was apparently normal in five, pathologically altered in six. In only two had the pathologic condition of the sinuses been diagnosed before operation.

Freund-Kaminer Reaction for Carcinoma.—Kubányi and Jakob's investigations of the action of plasma on carcinoma cultures failed to support the contention of Freund and Kaminer that carcinoma cells are dissolved by the serum of healthy human beings, but not by that of persons with carcinoma.

Three Hundred Years of Clinical Thermometry.—Ebstein points out that last year was the three hundredth anniversary of Santorio's attempt to introduce the use of the fever thermometer into medical practice. Santorio insisted that his thermoscope was borrowed from Heron, who lived in Alexandria in the year 10 A. D. Albrecht von Haller recalled in 1742 the repeated admonitions of Boerhaave to examine fever with the thermometer, but he recorded also the fright that the unfamiliar instrument aroused in patients. In 1715 Schwencke, a Dutch physician, published a book containing details on the use of the thermometer at the bedside, and his contemporary, de Haen, at Vienna, gave it its proper place in clinical instruction. But as late as 1860 Wunderlich was still endeavoring to introduce the clinical thermometer into private practice. The first "fever curve" was made by Traube in 1852.

Monatsschrift f. Geburtshülfe u. Gynäkologie, Berlin

78: 379-468 (April) 1928

Operative Management of Breech Presentation. O. Küstner.—p. 379.
*Heart Function and Pregnancy. H. Eufinger.—p. 395.
Extraction of Adherent Placenta. W. Zangemeister.—p. 402.
*Vesicovaginal Interposition of Uterus. L. Kriwsky.—p. 406.
*Prevention of Postoperative Adhesions. G. Gellhorn.—p. 413.
*Menstrual Cycle After Operation. C. Clauberg.—p. 417.

Heart Function and Pregnancy.—In 78 per cent of the cases of normal pregnancy to which Eufinger applied the Kauffmann test, the result was positive. This points to the presence of a low grade latent edema caused by insufficiency of the circulation. The fact that there was a decrease in positive results as pregnancy advanced was taken as an indication that the organism is capable of adapting itself to the increased burden of regulating the circulation in pregnancy.

Vesicovaginal Interposition of the Uterus.—From results obtained in a large number of cases, Kriwsky concludes that vesicovaginal interposition of the uterus according to the Wertheim-Schauta method is to be commended in cases of major prolapse of the uterus and the vagina. In this operation a restoration of the floor of the pelvis is generally necessary;

in many cases the size of the uterus must be reduced by amputation of the cervix by wedge-shaped resection according to Pfannenstiel, or by supravaginal amputation of the uterus according to Rieck. In women of child-bearing age sterilization is necessary. Among the disadvantages of the operation, he mentions the tendency to severe hemorrhage leading to the formation of hematomas between the uterus and the bladder, and the fact that there are recurrences in many cases.

Prevention of Postoperative Adhesions.—Among the measures advocated by Gellhorn are the use of pieces of rubber cloth instead of absorbent pads for wiping the viscera, in order to prevent irritation, and the introduction of an enema of water, or sodium chloride or dextrose solution while the abdominal cavity is being closed, in order that the intestines may assume a more normal position. No single method, however, but only the most careful attention to the minutest detail throughout the operation will prevent adhesions.

The **Menstrual Cycle After Operation.**—Clauberg made a study of the effect on menstruation of abdominal operations not directly connected with the menstrual apparatus, that is the uterine mucosa, the tubes, and the ovaries. In 40 per cent of sixty-six cases the onset of menstruation following the operation was at the regular time; in 38 per cent it was early; in 22 per cent, late. Of eighty cases in which the course of menstruation was investigated, 75 per cent showed no postoperative change as regards regularity; 25 per cent showed a change. In 20 per cent of the cases there was some change in the form of menstruation, such as in duration of flow, amount of blood, pain, etc.

Strahlentherapie, Berlin

28: 639-834, 1928

Radiobiologic Researches on Ascaris Eggs. A. Zuppinger.—p. 639.
*Roentgenotherapy of Genital Tuberculosis in the Woman. G. A. Wagner.—p. 759.
*Roentgenotherapy of Genital Tuberculosis in the Man. J. Palugyay.—p. 762.
*Roentgenotherapy of Tuberculosis of the Eye. G. Herrnheiser and G. Braun.—p. 770.
*Biologic Healing of Carcinoma. W. Lahm.—p. 779.
*Influence of Roentgen Ray on Carbohydrate Metabolism of Carcinoma of Portio. K. Jaroschka.—p. 784.
*Radium Treatment of Metabolic Diseases. M. Heiner.—p. 788.
*Treatment of Malignant Tumors with Roentgen Rays Plus Dextrose. H. Füllsack.—p. 795.
*Treatment of Chronic Leukemia. R. Epstein.—p. 799.
Roentgen Irradiation of Inflammatory Complications of Scarlet Fever. F. Bardachzi.—p. 805.
*Roentgenotherapy of Hay-Fever. Adolf and L. Pokorny.—p. 808.
Apparatus for Eliminating High Tension Danger. E. Fritsch.—p. 810.

Roentgenotherapy of Genital Tuberculosis in the Woman.—Wagner reports on forty-two cases of genital tuberculosis treated with roentgen rays. In sixteen of eighteen uncomplicated cases the results were satisfactory. One patient bore a healthly child two years after the irradiation and is again pregnant. Patients with complicating tuberculosis of the peritoneum (ascitic form) did not respond so well. Of two patients with tuberculosis of the uterus with tumor-like involvement of the portio, one was cured, the other was later operated on and subsequently died; at necropsy a tuberculous ulcer of the vagina was found. In seven cases the tuberculous nature of the adnexal disease was discovered at operation; postoperative roentgenotherapy gave good results in these. In Wagner's clinic the operation is stopped when the tuberculous nature of the disease is determined and the patient is thereafter treated with irradiation. The best results were achieved with small doses—from 10 to 15 per cent of the erythema dose at the site of disease. He looks with disfavor on curettage as a diagnostic measure.

Roentgenotherapy of Genital Tuberculosis in the Man.—Small doses are recommended by Palugyay—usually less than 5 per cent of the erythema dose at the disease focus—with intervals of from seven to ten days. The entire genital tract should be irradiated. He begins with the anterior prostatic field; here he applies from 10 to 15 per cent of the erythema dose to the skin surface. He next irradiates the anterior testicular field (from 2 to 7 per cent at the surface), the posterior prostatic field (from 15 to 20 per cent) and the posterior testicular field followed. Treatment must be individualized. Of twenty-six patients who were treated at least three years ago, 30 per cent are cured and 50 per cent improved. The disease was in all cases either bilateral or had recurred after semicastration or epididymectomy.

Roentgenotherapy of Tuberculosis of the Eye.—Herrnheiser and Braun report success with roentgen irradiation in nine cases of tuberculous choroiditis. In productive processes restitutio ad integrum can result. Small doses of rays of medium hardness are applied through filters of medium thickness and at relatively short intervals.

Biologic Healing of Carcinoma.—Lahm maintains that a defense zone or a defense reaction does not consist in the presence or formation of connective tissue. Neither is the fight against the carcinoma carried on by the mobile cells. In numerous cases the examination of biopsy specimens has shown the occurrence of destruction or characteristic transformation of carcinoma cells without a trace of a "reaction" in the vicinity. He has demonstrated that carcinoma of the cervix—at least in its immature forms and as adenomatous carcinoma—contains no glycogen, but as maturation sets in and squamous cells or horny pearls appear, glycogen is found in layers and drops. This phenomena confirms him in the view that cell maturation is a manifestation of a tendency to healing. He cites a recent case in which alteration of the carbohydrate metabolism of the cell could be demonstrated as accompanying the cell changes associated with irradiation.

Influence of Roentgen Ray on Carbohydrate Metabolism of Carcinoma of Portio.—In four specimens obtained at operation the carcinoma was found to have a larger content of glycogen than the musculature of the corpus. Administration of dextrose to the patient did not increase the glycogen content of the tumor. The glycogen content of tumors subjected to irradiation before removal was, on the other hand, three times as great as that of untreated tumors. The irradiation acts by inhibiting glycolysis. Jaroschka suggests that the disturbance in the equilibrium of the cell, resulting from the increase in glycogen, may aid in cell destruction.

Radium Treatment of Certain Forms of Metabolic Disease in Combination with a Particular Diet.—With few exceptions, patients with chronic neuralgia, chronic muscular infiltration, chronic joint diseases or chronic skin diseases were found by Heiner to have an absolute increase in blood sugar, with values up to 355 mg. per hundred cubic centimeters of blood; most of these patients had never presented glycosuria. Under radium treatment the blood sugar fell gradually to about 75 per cent of the initial value. To bring the blood sugar to 100 mg. or less, suitable dietary regulations were necessary. The subjective and objective disease symptoms decreased as the blood sugar fell. The biologic action of the radium appeared to be manifested in biochemical changes throughout the organism. Intramuscular or intracapsular injections of radium chloride in relatively small doses were followed by a more considerable and rapid fall in the blood sugar than was the case with much larger doses of radium applied in the usual manner.

Treatment of Malignant Tumors with Roentgen Rays Plus Dextrose.—Füllsack used E. G. Mayer's method (intravenous injection of dextrose before each roentgen irradiation) in thirty-five cases of malignant tumor. The results failed to confirm the usefulness of the method.

Treatment of Chronic Leukemia.—Treatment of chronic leukemia with roentgen rays must be strictly individualized. The doses usually recommended are, in Epstein's opinion, too high. The smallest effective dose must be ascertained and used until experience shows that it must be increased. In some cases refractoriness develops. Irradiation of the spleen alone may prove sufficient, otherwise the treatment may be extended to liver and bone marrow.

Roentgenotherapy of Hay-Fever.—In two physicians who had had attacks of hay-fever, lasting ten weeks, every summer for sixteen and twenty-eight years, respectively, Adolf and Pokorny obtained excellent results by the application of roentgen rays to the nose. They are undecided whether the effect was due primarily to an action on the nasal mucous membrane or whether it was of the nature of protein therapy.

Wiener klinische Wochenschrift, Vienna

41: 653-688 (May 10) 1928. Partial Index

*Tuberculosis Immunity. E. Löwenstein.—p. 653.
*Nodular Disease of Skin of Face. H. Königstein.—p. 655.
Case of Organic Tricuspid Insufficiency. R. Fischer.—p. 657.
*Differences Attributable to Sex in Gastric and Duodenal Ulcers. K. Hutter.—p. 659.
*Influencing Metabolism by Heat. H. Schur and A. Löw.—p. 661. C'cn.
Heart Disease and Pregnancy. J. Halban.—p. 663. C'cn.
"Winter Peak of Respiratory Diseases." W. Loew.—p. 665.
Id. O. Kirsch.—p. 666.
Reply. R. Lederer.—p. 669.

Tuberculosis Immunity.—Tubercle bacilli that had died spontaneously in 4 year old glycerin bouillon cultures were injected into guinea-pigs by the subcutaneous and intraperitoneal routes. Five months later living tubercle bacilli were injected into the peritoneal cavity. The control animals all died within ten weeks, while the experimental animals presented no signs of disease at the end of one year. Six months after a second intraperitoneal injection of bacilli, some of the animals were killed and their spleen was injected into healthy animals. The latter animals died within six weeks from severe tuberculosis. It appears, Löwenstein states, that although the animals inoculated with dead bacilli were rendered resistant to tuberculosis, living bacilli later introduced remained alive and virulent in the spleen. Two years after the first test injection, the animals were killed. There were found an extremely high-grade sclerosis of the liver and enlargement and fibrous degeneration of the spleen. The tuberculous foci were mostly in process of healing.

Hitherto Unobserved Nodular Disease of the Skin of the Face.—Königstein reports three cases (all in women) of a disease of the skin of the face manifested in isolated, slightly transparent, flat or rounded efflorescences, varying in size from a millet seed to a lentil, and not differing in color from the surrounding normal skin. Subjective symptoms were absent. The nodules were composed of lymphocytic elements, connective tissue bands and vessels. In some sections giant cells, leukocytes, plasma cells and eosinophils appeared. In two specimens germinating centers were found. Königstein concludes that this exanthem developed on the basis of adenoid deposits in the skin.

Differences Attributable to Sex in Gastric and Duodenal Ulcers.—From the study of more than 1,000 cases of gastric or duodenal ulcer, Hutter concludes that the morbidity is greater in women and the severity of the disease process is greater in men. The cause for the much greater mildness of the course, particularly of duodenal ulcer, in women is seen in the difference in the function of the pylorus in the two sexes in disturbances of the vegetative nervous system.

Influencing Metabolism by Heat.—Schur and Löw found that application of heat in the electric light cabinet lowered a pathologically raised basal metabolism, whether due to hyperthyroidism or fever, while it had little influence on normal metabolism. They found, further, that with the use of the electric light cabinet it was possible to cut short the chills in therapeutic malaria.

Zeitschrift für Urologie, Leipzig

22: 337-416, 1928

Double Kidney. J. N. Schapiro.—p. 337.
*Water Test of Renal Function. F. Lebermann.—p. 350.
Incidence of Congenital Malposition of Left Kidney. R. Fuchs.—p. 367.
Urea Test of Renal Function. H. Köhler.—p. 377.

Water Test of Renal Function.—The combination of Volhard's water test with an experimental diuresis provoked by drugs is capable of revealing the maximum capacity of the kidney for excretion. In persons with a normal cardiorenal system, the function of water excretion, of concentration and of dilution were found to be definitely increased by the addition of diuretics. Urea feeding was used for the test of maximal concentration and sodium dehydrocholate for the test of maximal dilution. The prognosis was best in those cases of acute nephritis, and to a lesser degree in those of chronic nephritis without edema, which displayed considerable variations in the three functions. Patients not responding to the test were shown clinically to have a bad prognosis. Patients with a purely cardiac edema responded to experimental diuresis with an improvement in the elimination and dilution of fluids. This appeared with such regularity as to suggest the possibility of utilizing the test as a differential diagnostic sign between a cardiac and a nephrogenous edema. The most pronounced diuretic effect was obtained with a soluble theophyllin preparation. No conclusions can be drawn so far from the application of the test in the cases of nephrogenous edema, because of variability and diversity in the results. Especially noteworthy was the total ineffectiveness of a soluble theophyllin preparation in these cases.

Zentralblatt für Chirurgie, Leipzig

55: 1281-1344 (May 26) 1928

Late Results of Formation of Artificial Acetabulum. H. Spitzy.—p. 1282.
Treatment of Diseased Os Lunatum. F. Partsch.—p. 1286.
Healing of Operative Wound in Hallux Valgus. M. Wülfing.—p. 1289.
*Temporary Ligation of Common Carotid Artery for Control of Hemorrhage Following Tonsillectomy. A. H. Hofmann.—p. 1292.
Ganglion Puncher. H. Ehrenfeld.—p. 1293.
Rust-Free Surgical Instruments. K. Wagner.—p. 1295.
Knotting of Rubber Catheter in Dilation of Esophageal Stenosis. A. Janik.—p. 1298.

Temporary Ligation of Common Carotid Artery for Control of Hemorrhage Following Tonsillectomy.—Following the removal of a tonsil, there developed an arterial hemorrhage which could not be controlled by ordinary measures. Attempts to grasp the bleeder with artery forceps were unsuccessful; compression for five hours did not cause clotting. As a last resort, the common carotid artery was dissected free. Ligation of the external carotid artery had no effect on the spurting vessel. Compression of the common carotid, however, at once stopped the bleeding. A stout silk ligature was passed around the artery and tied once, then a small gauze sponge was laid on it, and the ligature tied twice over this. On the third day the ligature was removed. The artery instantaneously resumed its volume. It appears that by this method of ligation, thrombus formation can be avoided.

Nederlandsch Tijdschrift v. Geneeskunde, Haarlem

72: 2037-2136 (April 28) 1928

Acute Infections of Joints. C. F. A. Koch.—p. 2039.
*Iso-Agglutination. L. van der Spek and T. Kortbeek.—p. 2048.
*Deposition of Gold After Intravenous Injection of Sanocrysin. R. Korteweg, N. Waterman and C. W. Prins, Jr.—p. 2063.
Cure of Lymph Fistula. D. H. Koetser.—p. 2066.

Iso-Agglutination.—In a series of investigations, van der Spek and Kortbeek found that the blood group remained constant. In healthy persons the agglutinability of the erythrocyte was also constant, but slight variations in the titer of the agglutinins of the serum were noted during the period of the research. In patients with pulmonary tuberculosis, various anemias, etc., the titer of the agglutinogens and of the agglutinins underwent wide variations. The titer after transfusion cannot be foretold by a knowledge of the titers of the serums of donor and receiver.

Deposition of Gold After Intravenous Injection of Sanocrysin.—In various organs of rabbits that had been injected intravenously with sanocrysin in amounts totaling many times the doses usual in clinics, Korteweg et al. found deposits of a yellowish brown pigment, which they were able to identify, with a large measure of probability, as gold sulphide.

Ugeskrift for Læger, Copenhagen

90: 425-450 (May 10) 1928

*Pyloric Symptom Complex. K. Faber.—p. 425.
Gastrographic Examinations. O. Christensen.—p. 427.
Should Nitrate of Silver Again Lead in Treatment of Gonorrhea? H. Haxthausen.—p. 429.
Atrophy of Optic Nerve After Compression of Thorax. H. Ehlers.—p. 432.

Pyloric Symptom Complex.—Faber describes three cases definitely diagnosed as chronic juxtapyloric ulcer but found on resection of the pyloric part of the stomach to be pyloric gastritis with or without small erosions in the mucous membrane. He maintains that gastritis is more significant in the pathology of the stomach than has previously been recognized, and that in surgical treatment of juxtapyloric ulcer resection of the entire pyloric portion should be considered. While all symptoms both in ulcer and pyloric gastritis may disappear after gastroenterostomy, resection removes the real basis of the disorder, the pyloric gastritis, likewise the danger of later jejunal ulcer.